

## ABSTRACT

Title of Dissertation: EXAMINING THE EFFECTS OF HOPE AND FEAR  
APPEALS ON COGNITIVE PROCESSING

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The potential of hope appeals as persuasive messages relative to other types of emotional appeals is unclear. Hope has been theorized to influence motivation, attitudes, and behaviors in meaningful ways; it is also believed to bias cognition toward goal achievement. Based on appraisal theories and the dual processing paradigm, a conceptual framework for how hope appeals could influence message processing, relative to fear appeals, was proffered. It was predicted that hope appeals would bias recipients, such that they would not pay close attention to the emotional appeal or recommendations that accompanied the appeal in order to maintain their positive mood. Fear appeal recipients were expected to counterargue the emotional appeal, but overestimate the quality of the accompanying recommendations. Emotional appeal type and recommendation quality were expected to interact to influence thought generation. Research questions addressing the influence of emotional appeals on recall were also investigated.

A 3(Appeal: hope, fear, or rational) x 2(Recommendation Quality: low or high) x 2 (Source Quality: low or high) independent groups experiment was conducted. Overall,

some support for the predictions was found. First, processing of the emotional appeal was examined. Hope appeal recipients generated more supportive thoughts and fewer counterarguments than fear appeal recipients. Processing of recommendations was then examined. Fear appeal recipients generated more supportive thoughts about recommendations than hope appeal recipients. Recommendation quality exerted a strong influence on thought generation. Recall of the recommendations and source was also examined. Hope appeal recipients recalled more recommendations than fear or rational appeal recipients. No interactions between emotional appeal type and recommendation quality emerged for the thought generation or recall measures. Theoretical and applied implications, as well as recommendations for future research, are discussed.

EXAMINING THE EFFECTS OF HOPE AND FEAR APPEALS  
ON COGNITIVE PROCESSING

by

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## Chapter 1: Introduction

### Hope Historically

Hope is one of the most frequently mentioned emotions in daily conversation (Shimanoff, 1984). It is used as a noun (e.g. “hope as a virtue”), verb (e.g., “to hope”), and adjective (e.g., “hopeful”); it can characterize a feeling (“hoping against hope,” Lazarus, 1999), a trait-based thinking style (“hoping for a solution,” Snyder, 2002); or actions one undertakes (“hope as a coping mechanism,” Clayton, Hancock, Parker, Butow, Walder, Carrick, Currow, Ghersi, et al., 2007; Farran, Herth, & Popovich, 1995; Lazarus, 1999). Hope is considered a foundational element of most major religions, and central to beliefs regarding what happens to humans after they die (Eliot, 2005).

Interest in the construct of hope has a long and rich history. The ancient Greeks believed that hope was the only item left in Pandora’s Box, stuck on the rim as a remedy for all the other ills released upon humankind (Eliot, 2005). More often than not, hope was viewed within the ancient Greek culture as a foolish means of coping with the disappointments of life (Ben-Ze’ev, 2000). Conversely, the Judeo-Christian tradition placed hope as a cornerstone of their faith in God; the importance of hope is mentioned approximately 75 times in the Old Testament and 58 times in the New Testament (Eliot, 2005). Hope is paired with love and charity as the central virtues of Christianity. The influential Christian philosopher Aquinas (1274/1947) argued that hope is innately good because it comes from God, and therefore should serve as a guiding principle for human behavior.

In the 20<sup>th</sup> Century, a secular conceptualization of hope emerged. This secular hope was science, acclaimed by some as the panacea and savior of humanity (Eliot, 2005). Philosophers then struggled with the relationship of hope and logic. Frankl (1946)

argued that hope determined the will of an individual to live, but could ultimately be dangerous if harnessed toward specific goals. The experiences within Nazi concentration camps illuminates the psychological struggle of hope among captive, desperate prisoners yearning for freedom; some are said to have survived because they never gave up hope, others because they never had it (Bar-On, 1995).

Later in the 20<sup>th</sup> century, a focus of communicating hope to others with the desire to mitigate negative outcomes for people emerged. In his role as President of the American Psychological Association (APA), Menninger (1959) called for research on the power of hope, believing that the use of hope in the domain of psychiatric treatment would prove fruitful. Not enough was known about hope to provide specific recommendations to clinicians at that time. Menninger also thought it was important for all doctors to be able to effectively communicate and transmit hope to their patients. Menninger's position was unique for the time; he conceptualized hope as something that could be scientifically investigated, quantified, and introduced the potential of hope as a powerful tool of persuasion.

In response to Menninger's call, nursing research produced an impressive body of scholarship about the role and function of hope within the patient-provider relationship, especially within terminal illness contexts (Clayton et al., 2007; Eliot, 2005). Many of these investigations are qualitative examinations of patients who possessed hope about survival relative to those who did not possess hope. Researchers were especially interested in how terminal cancer patients made meaning of their experiences and what these interpretations meant for their level of hope and health-related outcomes (Clayton et al., 2007). Overall, findings from this body of research showed that patients who felt

hopeful about their chances of recovery were more motivated to engage in behaviors to increase their chance of survival (Eliot, 2005; Groopman, 2003). Similar research was conducted within psychology. Case studies of hopeful and hopeless patients have informed clinicians on the importance of patients' hope levels for potential improvement and recovery (Farran et al., 1995).

Surprisingly few studies have examined the persuasive effects of feeling hopeful or the motivational powers of hope appeals. In 1994, Kinder lamented that research on affect had not examined “the consequences for thought and action of the more powerful emotional experiences that may play an important role in political life—anger, fear, *hope*, pride—have so far gone unexplored” (emphasis mine, p. 279). Yet, hope has been invoked in various types of communication campaigns, from political contests to public health interventions.

These invocations, called hope appeals, contain language stressing the possibility of desired outcomes, and are strategically used to reinforce the beliefs and behaviors of citizens. Nonetheless, little is known about the persuasive effects of hope appeals (Chadwick, 2008; 2011). Quite simply, the potential of hope appeals as persuasive messages relative to other types of emotional appeals remains unclear. And, if hope appeals are found to be effective at motivating change in message recipients, the underlying theoretical rationale is foggy at best. That is, it is unknown whether any effects of hope appeals are due to the communication of hope in the emotional appeal, the quality of arguments associated with the hope appeal, or the characteristics of the source (i.e., credibility) communicating the hope appeal (or any combination of these variables). This dissertation will examine the role of each of these variables within the persuasion

process. Moreover, this project seeks to examine the comparative use of hope- and fear-based messaging given that they share particular appraisal patterns. This study investigates the underlying cognitive mechanisms of hope and fear appeals, and argues that they have potential to elicit biased processing in message recipients. Indeed, both hope and fear are believed to bias cognitive processing of persuasive messages—but the kind of biased processing likely differs across emotional appeal types. Research on emotions, appraisals, outcomes, and processing will be reviewed with the goal of laying a strong theoretical foundation for comparing the effects of hope and fear appeals on cognitive processing.

## Chapter 2: Literature Review

### Hope Described

Hope is classified in this dissertation as a discrete emotion.<sup>1</sup> Emotions are intrinsic, evaluative reactions to agents, objects, events, or other stimuli, varying in intensity (Lazarus, 1991; Nabi, 1999; Ortony, Clore, & Collins, 1988). They are often short-lived, relatively acute, and a response to the appraisal of a stimulus in the environment that individuals perceive will facilitate or inhibit their goals (Forgas, 1995; Lazarus, 1991). Discrete emotions are associated with action-readiness tendencies, meaning that emotions are associated with generally predictable behavior (Fridja, 2007). Whereas emotions like disgust elicit a tendency to avoid a stimulus (Nabi, 2002), emotions like hope encourage individuals to approach and further appraise the stimulus (Lazarus, 1991). Appraisals are most generally defined as evaluative judgments (Lerner & Keltner, 2000; Tiedens & Linton, 2001). Individuals appraise elements within their environment for significance to personal well-being and goals. These appraisals allow individuals to make meaning of their experiences, and whether they should approach or avoid the stimulus (Lazarus, 1991). Appraisal theories propose that discrete emotions are caused by a set of key dimensions, or appraisals, that direct cognition and determine the nature of the emotional experience (Just, Crigler, & Belt, 2007; Lerner & Keltner, 2000; Smith & Ellsworth, 1985). Termed appraisal tendencies, these cognitive processes orient

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<sup>1</sup> There is disagreement regarding whether hope should be defined as an emotion or cognitive process (Ben-Ze'ev, 2000; Snyder, 2002). Averill and Sundararajan (2005) noted that the preference for cognitive-based explanations for hope come from its differences with other emotions: "hope does not fit into the traditional emotion paradigm: it is too cognitive, has few discernable physiological accompaniments, and it not associated with stereotypic behavioral expressions" (p. 156). Lazarus (1999) defined hope as an emotion that consists of an "affective blend which, depending on how we understand what is happening, includes both positive and negative judgments" (p. 655). This dissertation adopts the Lazarus perspective.

and influence how individuals understand ongoing changes within their environment. Discrete emotion scholars believe the interaction of certain appraisals (termed core-relational themes by Lazarus, 1991) elicit specific emotions. A pattern of appraisals determines the discrete emotion(s) experienced (Smith & Ellsworth, 1985). For instance, appraisals of importance, uncertainty, and lack of goal-congruence together elicit fear, whereas appraisals of importance, uncertainty, and high goal-congruence together elicit hope. Each of these appraisals is discussed later in this dissertation.

Varied versions of appraisal theory focus on the relationship between appraisal tendencies and emotion. Most apply the foundational framework developed out of Smith and Ellsworth's (1985) seminal study on the dimensions of emotions (Frijda, Kuipers, & ter Schure, 1989; Lerner & Keltner, 2000; Nabi, 1999). Smith and Ellsworth asked participants to recall, with as much detail as possible, past emotional experiences. Participants were then questioned about the different dimensions present or absent within each specific emotional experience. Six central appraisal dimensions were found to differentiate emotional states: attention to the stimulus; certainty about the stimulus; who or what is in control or responsible for the stimulus; pleasantness of the stimulus; perceived obstacles presented by the stimulus; and anticipated effort needed in response to the stimulus (Smith & Ellsworth, 1985). Studies have shown that each discrete emotion can be defined by a distinct combination of appraisals (Ellsworth & Smith, 1988; Just et al., 2007; Keltner & Lerner, in press; Lerner & Keltner, 2000; Nabi, 2002; Tiedens & Linton, 2001). Moreover, identification of appraisals can provide predictive power in terms of how to induce an emotional state (Lerner & Keltner, 2000; Nabi, 2010; Smith & Ellsworth, 1985). For communication researchers interested in studying message effects,

understanding the appraisals underlying emotions provides theoretical value with regard to the attributes of emotional appeals (Nabi, 2010). Appraisal theory is critical for understanding why people may experience different emotions under the same circumstances, and the same emotions under very different circumstances (Just et al., 2007; Lerner & Keltner, 2000; Smith & Ellsworth, 1985).

### **Appraisals of Hope**

Appraisal theory is well-suited to provide theoretical explanation for more complex emotions like hope (Frijda et al., 1989; Chadwick, 2011; Just et al., 2007; Lazarus, 1999). Hope is contextually determined through cognitive evaluation of the environment and affective reactions to contextual variables therein. The appraisals most pertinent to hope are: uncertainty, goal congruence, pleasantness, and importance (Smith & Ellsworth, 1985).

The association between hope and its appraisals has been documented empirically. Frijda et al. (1989) asked participants to recall 32 emotional experiences and fill out questionnaires on appraisals and action readiness tendencies associated for each experience. Hope was better predicted by its associated appraisals (uncertainty and goal congruence) and action tendencies (approach) than were other emotions included in their study. A more elaborate discussion of each of these appraisals is presented next.

**Uncertainty.** The most important appraisal associated with hope is uncertainty (Ben-Ze'ev, 2000; Frijda et al., 1989; Lazarus, 1991; 1999; Smith & Ellsworth, 1985; Snyder, 2002). Hope requires that some type of unsatisfactory element exists within our life experiences threatening perceptions of wellbeing or goal attainment (Lazarus, 1999). People generally desire to have positive experiences and avoid negative ones; but there

are many situations in which the outcome is unknown and unpredictable. At a minimum, individuals must not be certain about the possibility for the target being appraised: “certainty creates no space for hope; uncertainty creates space for hope” (Nunn, 2005, p. 67). Therefore, uncertainty is considered a necessary (but not sufficient) appraisal for hope to occur (MacInnis, de Mello, & Patrick, 2004; Smith & Ellsworth, 1985). Notably, uncertainty is also a critical component of fear.

Whereas some theories argue hope is determined by a probability judgment, most accept that it is the appraisal of possibility instead that elicits hope (Ben-Ze’ev, 2000; MacInnis & de Mello, 2005; Snyder, 2002). Therefore, the subjective appraisal need not be reflective of actual events; probability estimation is a cognitive process that can be accurate or easily biased (MacInnis & de Mello, 2005). The relationship of probability and level of elicited hope has not been empirically investigated; it is assumed that a variety of moderating and mediating factors influence the relationship (Lazarus, 1999). Therefore, hope can be experienced when the perceived probability of the goal congruent outcome is relatively low or relatively high; possibility is the necessary minimum (MacInnis & de Mello, 2005; Ben-Ze’ev, 2000).

Tiedens and Linton (2001) examined how discrete emotions and appraisals of certainty influenced probability judgments of future events. Participants were first asked to recall an event that made them feel happy, disgusted, fearful, or hopeful. These emotions were chosen for investigation because of their varied appraisals of certainty. Happiness and disgust are elicited in part because of appraisals of certainty, and fear and hope are defined by uncertainty. After writing about an auto-biographical experience eliciting the target emotion, participants were told they were moving on to a second,

unrelated, study. This second study asked about perceptions of what would happen in the year 2000, from baseball records being broken to gay marriage being legalized (the study was conducted in 1998). In addition to indicating their belief about whether the described event would occur, participants were also asked to rate the certainty of each judgment. Results indicated that participants who were induced to feel the more certain emotions (happiness and sadness) were also more certain about their judgment of future events. This study demonstrated that appraisals of certainty are associated with particular emotions and color subsequent perceptions and decisions.

The level of uncertainty can affect what emotions are experienced in conjunction with hope. When uncertainty is low, positive emotions such as confidence and happiness may be elicited along with hope (Ellsworth & Smith, 1988). When uncertainty is high, negative emotions accompany hope (Ellsworth & Smith, 1988; Lazarus, 1999). Hope can be elicited when an outcome that was certain becomes uncertain, and especially when an event that seemed impossible becomes at all possible (Ben-Ze'ev, 2000). Interestingly, both hope and fear hinge on appraisals of uncertainty and importance. Hence, hope and fear only differ in appraisals of goal congruence and pleasantness—making these two emotions ideal for comparison (see Table 1).

**Goal Congruence.** Goal congruence, also conceptualized as perceived obstacles (MacInnis et al., 2004; Smith & Ellsworth, 1985), is defined by the perception of whether a current event or future events are consistent with an individual's goal (Fridja et al., 1989; Smith & Ellsworth, 1985). Goal congruence represents the cognitive element of hope. Without evaluation, individuals cannot assess the certainty or the potential of perceived obstacles (MacInnis et al., 2004). When asked to recall a positive past

experience in which an individual had felt hopeful, remembering the positive situational context was associated with motivation to expend effort to overcome other perceived obstacles (Ellsworth & Smith, 1988).

**Pleasantness.** Pleasantness is conceived as a secondary appraisal of goal congruence in this dissertation. Empirical investigation has demonstrated that it is highly correlated with goal congruence ( $r = .91$ , Fridja et al., 1989). Pleasantness is defined as the degree of pleasure one derives from a stimulus (Lerner & Keltner, 2000). Appraisals of goal congruence are inherently pleasant; inferring goal incongruent information elicits feelings of unpleasantness.

**Importance.** Perceived importance, also conceptualized as involvement, is a central variable to the persuasion process (Eagly & Chaiken, 1993; Petty & Cacioppo, 1986) as well as being an emotion appraisal. It is generally agreed that all emotional experiences depend upon importance for a stimulus to cause emotion. Investigations of positive and negative emotions have shown that importance is a key element to eliciting either type of affect (Smith & Ellsworth, 1985). Research has also shown that hope is associated with higher levels of perceived importance than most other emotions (Ellsworth & Smith, 1988). It is believed that appraisals of importance (and/or involvement) are necessary to focus attention and generate emotional reaction, and that relevance of the emotion causing event may moderate the intensity of hope experienced (MacInnis & de Mello, 2005). Ben-Ze'ev (2000) asserted that the emotion of hope cannot be elicited unless an individual “cares intensely” about the outcome, but this proposition was not empirically tested (p. 475).

Appraisals provide understanding the underlying mechanisms and persuasive potential of discrete emotions. Moreover, the examination of appraisals allows for interesting comparisons among emotions. For instance, both hope and fear are emotions that motivate individuals to engage in behavior to achieve their goals (de Mello, MacInnis, & Folkes, 2002).

### **Hope versus Fear**

Understanding the causal outcomes of hope appeals is best achieved by employing useful comparison groups whereby hope can be evaluated against other better understood emotions—such as fear. Fear is defined as a “negatively valenced emotion, accompanied by a high level of arousal, and is elicited by a threat that is perceived to be significant and personally relevant” (Witte, 1998, p. 424). Fear can cause a variety of conscious or unconscious responses, including physiological manifestations such as increased blood pressure and heart rate or shaking of extremities. Research on the effects of feeling fearful and fear appeals has enjoyed a central position in social science research for over 50 years (Hovland, Janis, & Kelly, 1953; Janis, 1967; Mongeau, 1998; Rogers, 1975; Witte, 1992; Witte & Allen, 2000). That is, the persuasive, emotional, and cognitive effects of fear are fairly well established, whereas little is known about hope.

*Table 1: Appraisals of hope and fear*

	Certainty	Control	Importance (Attention)	Perceived Obstacles (Goal Congruence)	Pleasantness
<b>Hope</b>	low	low	high	moderate/ goal congruent	high
<b>Fear</b>	low	low	high	high/ goal incongruent	low

In terms of appraisals, hope and fear are often discussed colloquially as two sides of a coin (Chadwick, 2011; Lerner & Small, 2002; Smith & Ellsworth, 1985). Some of the comparisons and contrasts are quite clear—hope is a pleasant emotion and fear is an unpleasant emotion. Both hope and fear elicit attention, due to the appraisal of the stimulus' importance (necessary for many types of emotional arousal). Both fear and hope are associated with uncertainty of varying degrees. Both emotions are characterized by the appraisal of possibility to attain positive outcomes, or to avoid negative outcomes. At least one empirical investigation found that hope and fear are orthogonal constructs when the context is non-threatening (de Mello et al., 2002). What separates hope and fear is the appraisal of goal congruence. Individuals appraising circumstances as moving them toward a desired goal will feel hopeful; individuals perceiving that circumstances are impeding or moving them away from the possibility of attaining a desired goal will feel fear. Hope appeal recipients will appraise the situation as pleasant, while fear appeal recipients will find the situation unpleasant.

There are important implications derived from this literature comparing hope and fear. Given that this dissertation is attempting to understand and test the cognitive and affective outcomes of hope appeals, comparing fear appeals with hope appeals allows for more precision in determining the source of any empirical effects. If one were to simply compare hope appeals with a so-called “rational” appeal and find effects for the hope appeal, it would still be unclear if the effects were due to hope or due to the fact that the appeal was emotional. Comparing hope with fear (relative to a neutral baseline) and measuring the underlying appraisal patterns, however, allows for investigation of mediators that might affect particular cognitions. For instance, if the appraisal of

uncertainty mediates the relationship between an emotional appeal and cognition, then we would expect no differences between fear and hope appeals (i.e., both emotions are induced by some level of uncertainty). However, if the appraisal of goal congruence mediates the relationship between the emotional appeals and cognitions, then we should expect differences between fear and hope appeals. Thus, this juxtaposition of hope and fear allows researchers to determine (a) the message features that might be present in a hope appeal differentiating it from a fear appeal, (b) the cognitive outcomes of fear and hope appeals and (c) the reason why similar persuasive outcomes are expected of fear and hope appeals. The subsequent sections of this dissertation will review features of hope appeals, expected cognitive outcomes, and finally expected persuasive outcomes of hope appeals.

### **Message Features and Hope Appeals**

Unfortunately, with regard to understanding if and why hope appeals are persuasive, communication researchers have little in the way of published empirical research to offer. Whereas hope has been investigated within literature, art, and cultural studies, it has received scant attention within the social sciences (Braithwaite, 2004). Marketing research has proposed potential message strategies that can be used to induce hope in consumers (MacInnis et al., 2004; MacInnis & de Mello, 2005; MacInnis & Chun, 2007). The majority of this scholarship is conceptual, with propositions about the potential effects of hope on consumer behavior grounded in past research on appraisal theory, emotion, and marketing. MacInnis et al. (2004) identified four antecedents to feeling hopeful that marketers target with communication strategies to induce feelings of hope and motivate consumption. First, consumers often perceive obstacles to obtaining

their goals; marketers can present their product as a tool to overcome the perceived obstacles. Consumers have also often suffered disappointment when trying to obtain a goal; marketers can demonstrate how their product will alter future experiences and allow consumers to obtain the goal (notably similar to the idea of goal congruence). MacInnis and colleagues also proposed that consumers perceive less control when striving toward a goal; so, marketers can claim their product gives the consumer more control over achieving the goal. Finally, marketers seek to demonstrate that their product may be a new way to achieve a goal, or may increase the luck of the consumer to achieve a desired goal (i.e., the outcome is uncertain; but, the uncertainty is low). By targeting these appraisals associated with hope, marketers seek to persuade consumers that a desired outcome can be achieved through consumption of their product. Unfortunately, these propositions have not been submitted to empirical investigation and analysis, making it impossible to talk about any effect size associated with hope appeals on experienced hope or persuasion (in this case, intention to buy the product).

In a recent conference paper, Chadwick (2011) noted that hope appeals are frequently used without any type of theoretical guidance and argued that a comprehensive theory of the effects of hope and hope appeals is needed. Past research on feeling hope, appraisal theory, and discrete emotion theory were synthesized to develop the framework for Persuasive Hope Theory (Chadwick, 2011). Her inaugural empirical investigation tested for correlations between the established appraisals of hope and subjective feelings of hope; it also attempted to predict subjective feelings of hope from the appraisals used in a message.

Chadwick's (2011) study consisted of a 2 (Hope Appeal: weak/strong) x 2 (Topic: flu/climate change) pre-test, post-test, control group design. "Weak" and "strong" hope-based messages about climate change, seasonal influenza, and a control message about job interviewing were crafted; participants were randomly assigned to read one message. Strong hope messages attempted to elicit high levels of all the appraisals identified as necessary to evoke hope (goal congruence, possibility, future expectation, and importance); the weak hope message attempted to evoke low levels of each appraisal. All participants were then presented with action recommendations. A second phase of data collection was collected one week after the post-test.

Results yielded from the two topics (flu or climate change) were too statistically different to be collapsed for analysis; only the climate change message led to increases in each of the hypothesized appraisals. Chadwick's data revealed that the four appraisals accounted for 14% of the variability in subjective feelings of hope for the climate change message. That said, her messages were ineffective at generating high levels of hope; subjective feelings of hope were below the mean point on a five point scale for both message topics. The message topics arguably failed to elicit enough personal importance in the individuals. It may be that seasonal influenza and climate change is not personally relevant to an undergraduate population.

Although these studies use a theoretical framework to develop hope appeal, they do not examine whether hope appeals actually lead to increases in positive attitudes or behaviors (i.e., persuasiveness). Moreover, this body of research does not aid in telling us why hope appeals might be effective at garnering persuasion, if they are effective at all. However, it is not the purpose or intent of this dissertation to develop predictions

regarding message features; these message characteristics are already well established in the appraisal theory literature (Smith & Ellsworth, 1985; Lazarus, 1991). Rather, the interest here is in the theoretical underpinnings of the effects of hope appeals as a function of how they are cognitively processed.

### **Hope Appeal Effects**

As previously noted, the persuasive effects of hope appeals have not been thoroughly examined within empirical research; but, one study provides insight on the potential effect of hope appeals. Roseman, Abelson, and Ewing (1986) examined emotional appeals used in brochures from social and religious organizations. These brochures were content analyzed and coded for the specific discrete emotion focused on in the message. Although their analysis found that brochures included various emotions such as anger and pity, fear and hope dominated the content of the brochures. Moreover, hope appeals were most commonly used for organizations focused on reform. Roseman et al. asked participants to read each of the brochures and rate (a) the favorability of each organization, (b) how much money they would donate to each organization, (c) whether they would join the organization if they received an appeal in the mail, and (d) whether they would urge their friends to join. These four questions were employed as alternate indicators of an overall “organizational attractiveness” measure that ranged from 0 to 8. Their data indicated that, controlling for audience factors, organizations using hope appeals were more attractive than were organizations using fear or anger appeals.

The data suggest the likeability of hope appeals over fear (or anger) appeals, if organizational attractiveness can be considered a proxy for likeability. Given that this study has not been replicated, and given they did not measure argument strength or

attitude change directly, there is limited confidence in the generalization of these findings. Although the Roseman et al. (1986) study provides some indications that hope appeals might be better received, relative to other emotional appeals (e.g., fear appeals), the study does not provide direction in *why* an audience might prefer the hope appeals.

There are multiple potential explanations for why individuals may find hope appeals more likeable. One explanation is that receivers of hope appeals carefully and analytically consider a message, and if they find the arguments compelling, they will prefer the message based on these grounds. With regard to the Roseman et al. (1986) study in particular, it could be that because existing messages from different campaigns were used, the hopeful message could have contained higher quality arguments than the fear appeal. An alternative explanation is that receivers of hope appeals become hopeful, pay attention to portions of the message they find appealing and goal congruent (ignoring other portions), and prefer the message because they processed it in a biased fashion. Moreover, efficacy, which was not measured in the Roseman et al. investigation, could play a major role in mediating or moderating the effect of the appeal. In order to provide such theoretical direction, significant factors influencing cognitive processing of persuasive hope appeals must be investigated. These factors, situated within the dual processing paradigm and literature on mood and message processing, will be reviewed next.

### **Dual Processing Models**

Dual processing models, such as the Elaboration Likelihood Model (ELM; Petty & Cacioppo, 1986) and the Heuristic-Systematic Model (HSM; Chaiken, 1980), have dominated literature on message processing and attitude change. Dual processing models

assume myriad variables outside of message quality can influence information processing, attitudes, and message acceptance (Booth-Butterfield & Welbourne, 2002; Eagly & Chaiken, 1993; Petty & Cacioppo, 1986; Todorov, Chaiken, & Henderson, 2002).

The HSM explains how variables internal and external to a persuasive message can influence attitude change (Chaiken, 1980). This dual-processing model posits two routes to persuasion: the systematic route is a deeper, closer level of message processing in which attention is given to the message and elaboration occurs. Heuristic processing is a shallow, more peripheral type of processing that uses peripheral cues and knowledge structures (heuristics) to make quicker decisions about the message or stimulus. Chaiken (1980) hypothesized that both routes (i.e, heuristic and systematic) of persuasion likely occur simultaneously in daily life, but can be dissociated through experimental research. This dissociation is evidenced in experimental results showing cognitions about the message mediate the relationship between the stimulus and attitude for systematic processing; in the case of heuristic processing, message cues influence attitudes directly.

Similarly, the Elaboration Likelihood Model (ELM) is an attempt to reconcile seemingly contradictory findings about persuasion under one conceptual umbrella, by specifying a finite number of roles that message and source variables can have to influence attitude change (Petty & Cacioppo, 1986). The central route is defined by close attention to and elaboration about the message content; the peripheral route is concerned with the processing of variables outside message content; for example, the ELM generally posits that emotions elicit peripheral processing (Petty & Cacioppo, 1986). Discussion of the ELM can be difficult because the theory has undergone criticism and

revision over the years (see Stiff, 1986; Stiff & Boster, 1987; Eagly & Chaiken, 1993). Originally, the two routes to persuasion (central, peripheral) were qualitatively distinct and only one was posited to happen at one time; that is, people processed either centrally *or* peripherally (emphasis mine). Early experiments showed the complete dissociation of processing (Petty, Cacioppo, & Goldman, 1981). In responding to critique (Stiff, 1986; Stiff & Boster, 1987), Petty, Cacioppo, and their colleagues argued that processing was actually on a continuum, with central processing on one end and peripheral processing on the other end (Petty, Kasmer, Haugtvedt, & Cacioppo, 1987). Thereafter, discussions of the ELM argued that the processing types are not completely distinct (Booth-Butterfield & Welbourne, 2002).

Both dual processing models hypothesize that attitude change is determined by the elaboration of message content (Chaiken, 1980; Petty & Cacioppo, 1986). There are cognitive and contextual limits on what can be attended to and processed by an individual at any given time. The metaphor of message recipients as cognitive misers epitomizes how processing choices are made; sufficient levels of both motivation and ability are needed for elaboration (Fiske & Taylor, 1991). It is generally agreed that motivation and ability determine the nature of processing.

**Ability.** The first major determinant of processing is ability, conceptualized as an individual's capacity to process and comprehend information. Dual processing models take environmental factors into account when predicting processing, including the sheer overload of persuasive messages received on a daily basis (Eagly & Chaiken, 1993). There are a variety of factors that can decrease a message recipient's processing and elaboration ability; distraction is the most commonly induced variable to decrease

processing ability (Petty, Wells, & Brock, 1976). There are, however, several other variables that can influence processing and elaboration ability (Booth-Butterfield & Welbourne, 2002): prior knowledge (Averbeck, Jones, & Robertson, 2011); message complexity (Hafer, Reynolds, & Obertynski, 1996); time pressure (Kruglanski & Freund, 1983); and message repetition (Cacioppo & Petty, 1989). If ability is low, message recipients will likely not be able to systematically process and will rely instead on heuristic cues (Todorov et al., 2002).

**Motivation.** It is generally agreed upon that individuals are generally motivated to hold accurate attitudes and beliefs (Chaiken, 1980; Chaiken, Liberman, & Eagly, 1989; Eagly & Chaiken, 1993; Petty & Cacioppo, 1986; Booth-Butterfield & Welbourne, 2002); accuracy motivation presupposes unbiased analysis of information used to form attitudes and beliefs. Therefore, when motivation is low, heuristic cues that help determine accuracy (e.g., majority opinion is correct) are used to make decisions. When accuracy motivation is increased, systematic processing will dominate (Eagly & Chaiken, 1993). The sufficiency principle assumes that people are cognitive misers, but desire to be accurate (Chaiken, 1980; Fiske & Taylor, 1991). Individuals will assess their actual confidence in their attitude versus their desired confidence. That is, people are motivated to process until they reach the desired level of confidence for the perceived accuracy of an attitude. Whereas accuracy motivation is considered the default processing mode, there are many factors that can alter the nature of message processing.

Personal involvement (i.e., importance) can lead to defensive motivation when processing (Eagly & Chaiken, 1993). Defensive motivation causes individuals to process in a biased manner (Liberman & Chaiken, 1992). Liberman and Chaiken (1992) tested

the proposition that personally relevant messages can motivate biased systematic processing as a function of individuals' goals. For their study, students in an undergraduate psychology course volunteered to participate in research on health concerns. Pre-measures of coffee consumption and beliefs about the risk of caffeine were taken at the beginning of the semester. Participants who consumed coffee were matched on prior belief measures with participants who abstained. After reporting to the laboratory, participants were asked to read two health articles. The target article included the threat manipulation. The high threat condition confirmed the link between caffeine consumption and cancer; the low threat message disconfirmed the link. Cognitive processing was measured through a self-report of how much effort was used to understand the message, recall of the message, perceived veracity of the message, thorough assessment of evidence as strong versus weak, and the number of supportive versus unsupportive thoughts listed. Results showed that personal relevance significantly lowered belief in the veracity of the medical report, regardless of threat level; high-relevance participants (coffee drinkers;  $M = 5.60$ ) were less likely than low-relevance participants (non-coffee drinkers,  $M = 6.72$ ) to accept the purported link of caffeine and breast cancer,  $F(1,171) = 27.8, p < .001$ . Recall did not significantly differ across conditions, leading the researchers to believe that defensive inattention was not used by participants; rather, participants in the high-relevance condition reported marginally higher effort levels to read and understand the article. The authors argued that biased systematic processing is more common than inattention, but that these findings may be due to the nature of the laboratory setting. Liberman and Chaiken's (1992) research shows that personal investment on its own can bias processing.

Research outside of the dual processing framework has investigated other types of motivation that may simultaneously exist or overpower accuracy motivation (Ditto & Lopez, 1992; Das, de Wit, & Stroebe, 2003; de Hoog, Stroebe, & de Wit, 2005; 2008; Eagly & Chaiken, 1993; Kunda, 1987; 1990; 1999). Highly-involved message recipients with vested attitudes often unconsciously prioritize reducing their uncertainty and increasing their confidence; this motivation may overpower desires for accuracy (Kunda, 1990; 1999). Of interest to the current investigation, it has been theorized that feelings of hope may overpower accuracy motivation, but there is no empirical research testing this assertion (MacInnis & de Mello, 2005). Notably, the idea that moods and emotions can influence processing is not new.

### **Mood and Processing**

A large body of research has examined the effect of incidental mood (moods not relevant to the decision being studied) on persuasion, specifically how happy versus sad moods influence persuasion. Extant literature on mood and message processing focuses on respondents' motivation and/or ability to differentiate between weak and strong arguments within persuasive messages when in happy or sad moods (e.g., Bless, Bohner, Schwarz, & Strack, 1990; Bohner, Chaiken, & Hunyadi, 1994; Bohner, Crow, Erb, & Schwarz, 1992; Mitchell, 2000; Petty, Schumann, Richman, & Strathman, 1993; Schwarz, 1990; Wegener, Petty, & Smith, 1995). The ELM posits that negative affect (generally operationalized as sadness) causes central processing, while positive affect (generally operationalized as happiness) causes heuristic processing to dominate (Bless, Schwarz, Clore, Golisano, Rabe, & Wölk, 1996). A major underlying explanation for these opposing effects is the Hedonic Contingency Hypothesis (Wegener & Petty, 1994).

The Hedonic Contingency Hypothesis posits that happy people generally avoid careful processing of messages because they may be hedonically punishing (Wegener, Petty, & Smith, 1995); therefore, the assessment of hedonic consequences (i.e. whether the message is positive or negative) is more likely for happy than for sad people. That said, happy people are more likely to process a message systematically if it is positively valenced than if it is negatively valenced. Sad people will process a message regardless of hedonic consequences in an attempt to improve their mood (Negative State Relief Model; Cialdini, Darby, & Vincent, 1973) because people in a sad mood “have nowhere to go but to the positive end of the mood continuum” (Hullett, 2005, p. 427).

Overall, this body of research demonstrates that “all things being equal, people will prefer to think and behave in ways that prolong positive affective states and improve negative ones” (Forgas, 2003, p. 609). But new research complicates this maxim. Griskevicius, Shiota, and Neufeld (2010) focused in on the effects of irrelevant, positive discrete emotions on persuasive message processing. The researchers were specifically interested in whether discrete positive emotions were processed similarly and if processing was mediated by the same predictors in all cases. Six positive emotions were identified for study: attachment love, nurturing love, anticipated amusement, anticipated enthusiasm, contentment, and awe. In the first study, participants were randomly assigned to write about a life experience that elicited the targeted emotion. Participants were then randomly assigned to read either strong or weak arguments about instituting comprehensive exams as a graduation requirement (Petty & Cacioppo, 1986). Results showed that anticipatory amusement, enthusiasm, and attachment love facilitated heuristic processing of the arguments. Conversely, awe and nurturing love elicited

systematic processing. That is, attitude toward the message advocating for comprehensive exams was a function of argument strength for awe and nurturing love, but not for the other emotions. The authors hypothesized that emotions like amusement and enthusiasm are similar to happiness, the most commonly used affect induction in mood and processing studies. Awe and nurturing love, although classified as positive emotions, are noticeably different in appraisal tendencies and core relational themes. It therefore makes logical sense that these emotions would elicit differences in message processing. Study 2 examined nurturing love, awe, anticipatory enthusiasm, and amusement. Emotion induction was accomplished via narratives piloted to elicit a significant amount of the targeted emotion. Participants were randomly assigned to read a strong or weak argument about instituting a normal grading curve (Tiedens & Linton, 2001). Cognitive appraisals of certainty and responsibility were measured along with a thought-listing task. The results of study 1 were replicated, in that nurturing love and awe elicited systematic processing and anticipated enthusiasm and amusement elicited heuristic processing. Appraisals of uncertainty and responsibility were tested as potential mediators of the relationship between emotion and persuasion. Both responsibility and uncertainty appraisals were identified as significant mediators, but not in a consistent pattern across emotions. Overall, higher levels of certainty were associated with heuristic processing. The authors argued that these results support the need to examine positive emotions as discrete entities with differential outcomes. These results complicate the notion that positive affect elicits heuristic processing. Moreover, hope is similar to awe in appraisals of uncertainty and lowered situational control. Therefore, hope appeal recipients may be motivated to systematically process.

The literature on mood maintenance would lead to the hypothesis that hopeful participants will not be motivated to process in an attempt to maintain their positive feelings (Wegener & Petty, 1994; Wegener, Petty & Smith, 1995). Griskevicius et al. (2010) would argue that because uncertainty appraisals are central to hope, these appeals are more likely to elicit systematic processing. That said, the body of research generally only addresses whether an individual will systematically or heuristically process while feeling a message-irrelevant emotion and assuming accuracy motivation. As previously discussed, messages that elicit strong appraisals of importance and provide goal-related information (characteristics of hope appeals) are known to cause biased processing (Kunda, 1999). The ways in which biased processing can change the nature of systematic and heuristic processing is considered next.

### **Biased Processing and Hope**

In this dissertation, it has been established that hope can be an attribute of persuasive messages, i.e., the combination of hope appraisals featured in the message. I have also provided evidence that these appraisal patterns lead to feelings of hope and that feelings of hope create motivation in people, ultimately affecting the type of message processing in which they engage. Likewise, fear also creates motivation, albeit a different kind of motivation, that is causally antecedent to message processing. That is, it is predicted that hope appeals and fear appeals are persuasive, but the nature of cognitive processing differs. I argue that fearful and hopeful message processors are equally biased, but the kinds of processing that manifests in hopeful relative to fearful message receivers will differ. This section of the dissertation will specifically address the kinds of

processing strategies expected when people receive goal-congruent (hope appeals) and goal-incongruent (fear appeals) information.

Biased processing can occur when personal involvement overpowers individuals' motivation to process information accurately (Eagly & Chaiken, 1993). When motivated by accuracy, people will continue to process information until they are confident that they hold a correct opinion or can make the best decision (Kruglanski, 1980; Kunda, 1990; 1999); conversely, biased processing occurs when "one has a preexisting goal and engages in a highly selective search for information to support that objective" (Nabi, 1999, p. 303). Therefore, when individuals have vested interest in their current attitudes and beliefs, they may process information in a way that allows for those beliefs and attitudes to be maintained (Kunda, 1999). Simply the presence of goal-incongruent information about a highly relevant topic is believed to induce biased processing (Kunda, 1990; Liberman & Chaiken, 1992; Petty & Cacioppo, 1979). Biased processing can occur through systematic, close processing or through the use of heuristics that aid in the maintenance of the preferred belief (Eagly & Chaiken, 1993; Ditto & Lopez, 1992; Petty & Cacioppo, 1979; 1986; see Kunda, 1999 for a full discussion of biased processing).

Kunda's (1987) work on biased processing shows that even when individuals are presented with objective evidence, people still engage in biased processing in a self-serving manner (i.e., toward achieving their own personal goals). Kunda first examined this bias in the context of projecting marital success. Participants (college students) were informed that the divorce rate in America was 50 percent and told they were participating in a study on the role of personality characteristics in the success of marriage. Participants were given a personality profile of a hypothetical person who supposedly

graduated from the same university in the 1960s. They were also told whether the person was still married or was divorced, and then asked to judge the personality characteristics that would be more beneficial to possess for a successful long-term relationship. Later, they were asked to list their personality traits and rate how helpful these traits would be for a successful marriage.

Results demonstrated evidence of biased judgments. First, when asked to estimate the chance they would divorce, the average estimation was 20 percent—despite the fact they were explicitly told that the average divorce rate was 50 percent. Participants also predicted that the hypothetical character, whose personality traits mirrored their own traits, had a greater chance of successful marriage relative to the actual probabilistic rate. For example, participants who were not religious thought that atheism would help the non-religious character have a successful relationship; those who were deeply religious reported that devoutness would enhance the hypothetical character's ability to have a successful marriage.

This biasing effect did not occur when involvement was low, however. When asking students who were not interested in attending law or medical school the attributes needed to be successful in those ventures, students were more objective in judging the needed characteristics and less inclined to believe that their own traits would be helpful in getting into a professional school. In two more experiments, Kunda (1987) demonstrated that when perceived threat to self is high, individuals will downplay the veracity of evidence (notably, this is consistent with Witte's [1992] notion of defensive processing found in people experiencing high fear and little efficacy); when the threat is lessened, they are more likely to objectively process the message. In the third study, participants

read an article arguing that high caffeine consumption leads to increased risk of breast cancer for women. The results indicated that participants who self-reported caffeine consumption did perceive being at a higher risk for developing the disease; they were also more likely to doubt the veracity of the information in the article. Men did not differ in their judgments of the risk to women or the veracity of the article, arguably because men were less invested in the issue. The fourth study showed that when the threat was lowered to simply developing benign lumps in the breast because of caffeine consumption, the caffeinated women were less likely to doubt the veracity of the article. Overall, these studies demonstrated that people are likely to maintain optimistic beliefs about their future in the face of disconfirming information. Moreover, this tendency can be explained by biased cognitive processing, operationalized as the prospective judgments made by study participants. Kunda (1999) called for an investigation of the underlying mechanisms that can cause biased processing. This dissertation aims to answer this call through examining the potential biasing effects of hope appeals.

Overall, there is limited empirical research examining how discrete emotions could elicit biased message processing. Historically, communication that arouses negative affect has been thought to cause biased processing (Janis & Feshbach, 1953; Janis, 1967); a majority of this research is focused upon fear and persuasion (Nabi, 1999). There is some research that examines how fear appeals influence message processing. Gleicher and Petty (1992) examined the effect of relevant and irrelevant fear on the processing of message recommendations. Moderate levels of fear were expected to motivate message recipients to attain reassurance that a threat could be overcome. When reassurance was present in the beginning of a message, recipients were not motivated to

process the rest of the message, lest they lose reassurance. These participants were not influenced by the quality of the arguments made in the message. When reassurance was uncertain, message recipients carefully processed the message. Their perception of the message was determined by the quality of the arguments presented. Gleicher and Petty noted that message reassurance is a fuzzy concept that cannot be limited to manipulation of an article's headline; source expertise and argument strength could elicit perceptions of message quality, which would in itself be reassurance to a fearful reader.

These findings can be used to infer that a hope-based message would provide its readers with reassurance in the form of hedonic, goal-congruent information. Therefore, participants who receive a hope appeal in this study may not be motivated to process the recommendations closely. Conversely, participants receiving a fear appeal should be highly motivated to process recommendations in search of reassurance.

More recent investigations have focused on how fear appeals can bias processing of health recommendations (Das et al., 2003; de Hoog et al., 2005; 2008). Importantly, Das et al. (2003) separated the emotional appeal from message recommendations to be able to examine the effects of the appeal on processing of the recommendations in their research. Overall, this work has shown that when people feel fearful (i.e., threatened) and vulnerable, they will rate recommendations associated with overcoming threats more positively than those who do not feel vulnerable, regardless of the recommendations' argument quality. Moreover, it was demonstrated that source credibility manipulations had no significant effect on attitudes toward the recommendations. That is, these results show that fearful people engaged in motivated processing of goal congruent information, such that they overestimated the potential effectiveness of goal-congruent

recommendations. This body of research provides interesting predictions for the effects of hope and fear appeals on message processing.

Because high involvement (i.e., relevance) is a necessary precondition for hope and fear, and given that involvement leads to a desire to process in a self-preserving manner, then people who receive a goal-incongruent message (in the study, a fear appeal) will be more likely to doubt the veracity of the information and/or ignore the message altogether. Similarly, people receiving a goal congruent message (in this study, a hope appeal) will be less likely to doubt the veracity of the message; the differential effects of processing are due to the presence of goal congruent or incongruent information. Conversely, fear appeal recipients would pay close attention to and be more persuaded by message recommendations than hope appeal recipients.

It has been established that the desire for goal-congruent information likely causes bias in message processing: specifically, individuals are motivated to maintain a belief in their ability to attain their desired goals (Kunda, 1987; Liberman & Chaiken, 1992). Thus, I predict that goal-incongruent appeals, in this case fear appeals, and goal congruent appeals, in this case hope appeals, will both cause biased processing—albeit different types of biases. Although biased processing can manifest in a variety of ways, in this dissertation I focus on four particular forms: relevant versus irrelevant thoughts, supportive thoughts, perceptual defense in the form of counterarguing, and memory recognition.

**Bias 1: Thought-Listing.** Significant differences in the amount and type of thoughts listed about the emotional appeal is expected when comparing those receiving a fear appeal with those receiving a hope appeal. Moreover, differences between the

emotional appeal conditions and the rational appeal are expected to emerge. Past research has demonstrated that those in pleasant mood and emotional states are expected to generate more irrelevant thoughts than those in negative mood states (Seibert & Ellis, 1991). Literature also suggests people do not argue goal-congruent information; it is therefore predicted that individuals receiving hope appeals will be less likely to counterargue the message and associated recommendations (i.e., doubt the veracity) and be more likely to have message-supportive thoughts about the appeal and recommendations—regardless of the actual argument quality or source quality (Das et al., 2003; de Hoog et al., 2008). Those induced to feel fear will be motivated to find information to reduce uncertainty about the threat; they will therefore process in a biased, systematic way to seek reassurance (Gleicher & Petty, 1992). Fearful people will be more likely to counterargue the goal-incongruent information of the fear appeal, while generating message-supportive thoughts about the recommendations they receive to help address the threat. Moreover, fearful participants are then likely to generate message-supportive thoughts about the recommendations and source, regardless of their quality (de Hoog et al., 2008). The overall type of these thoughts—whether they reflect the emotion communicated in the message specifically—will also be investigated.

**Bias 2: Recall.** Nabi (1999) argued that if emotional appeals elicit motivated attention and processing, their effects would be evidenced through disparate recall. That is, information relevant to the felt emotion and the emotion's goals would be recalled more than other types of information. Previous research has documented that emotions can alter attention and recall in mediated contexts (Brosius, 1993; Gurevitch & Levy,

1986; Newhagen, 1998; Newhagen & Reeves, 1992), and that type of recall can vary by emotion (Mitchell, Brown, Morris-Villigran, & Villigran, 2001).

The biased motivations of hopeful and fearful individuals are also predicted to manifest in the recall measures. Specifically, this study will examine memory recognition, a recall measure commonly used in communication research (Mitchell, 2000; Skalski, Tamborini, Glazer, & Smith, 2009). There are three types of memory recognition examined in this study: hits, misses, and false alarms. Here, a “hit” reveals accuracy; a participant recognizes a statement as being in the message that was indeed in the message. A “miss” reveals non-accuracy; a participant fails to recognize a statement when it was in the message. Finally, a “false alarm” is a measure of non-accuracy and specifically of a self-serving bias. Here, a participant recalls a message as being in the appeal when it was not.

The biased motivations of hopeful and fearful individuals are also predicted to manifest in the recall measures. Individuals receiving a hope appeal are expected to accurately recall less than those receiving a fear appeal. But the nature of this recall is not known. When asked to recall the recommendations, hope appeal recipients could generate a significant number of misses. Fear appeal recipients are expected to more accurately recall recommendations because they processed them closely seeking reassurance. But, because of their desire for reassurance, they are posited to have not scrutinized the recommendations, and may have a significant number of false alarms, such that they will overestimate the amount of recommendations presented. The next chapter presents the hypotheses and research questions proffered in this study.

### Chapter 3: Hypotheses and Research Questions

Ditto and Lopez (1992) wrote that “the intuition that hopes, wishes, apprehensions, and fears affect judgments is compelling and persistent. Turning this intuition into viable empirical and theoretical data, however, has proved one of the most recalcitrant problems in the history of experimental research” (p. 568). The lack of attention to hope within social scientific research has created a significant knowledge void for those seeking to understand its persuasive power. The dearth of knowledge presents justification for a thorough, empirical investigation of the effects of hope appeals on cognitive processing.

To review, an individual’s hopefulness about achieving a desired outcome is determined by appraisal of her environment. People encounter a variety of goal-congruent and goal-incongruent messages about their goals on a daily basis. Messages like hope appeals lower uncertainty; conversely, fear appeals attempt to increase uncertainty via severity and susceptibility (Witte, 1992). To maintain hope, individuals may downgrade the importance of accuracy and engage in biased processing. The nature of this biased processing depends on the type of information encountered. Individuals who encounter a hope appeal have little motivation to challenge the veracity of the message content, or scrutinize accompanying recommendations and their source. Moreover, past research has demonstrated that those in pleasant moods and emotional states are expected to generate more irrelevant thoughts than those in negative mood states, indicating lack of motivation to process closely (Seibert & Ellis, 1991).

Thus, I predict that goal-incongruent appeals, in this case fear appeals, and goal congruent appeals, in this case hope appeals, will both cause biased processing—albeit

different types of biases. It is predicted that these varied types of biased processing can be demonstrated through thought listing and recall of the recommendations and their source.

*H1: Hope appeal recipients will generate fewer relevant thoughts and more irrelevant thoughts about the emotional appeal than fear appeal recipients.*

*H2: Hope appeal recipients will generate more supportive thoughts and fewer counterarguments about the emotional appeal than fear appeal recipients.*

*RQ1: Will the amount of emotional thoughts generated vary as a function of the appeal?*

*RQ2: Will a “match” between appeal and type of emotional thoughts generated (hopeful or fearful) emerge? Or will fear appeal recipients generate more hopeful thoughts?*

**Regarding the theoretical rationale for difference in cognitive processing of recommendations as a function of receiving a hope or fear appeal.**

Individuals encountering a fear appeal will be highly motivated to process associated recommendations in a systematic, biased manner (Das et al., 2003; de Hoog et al., 2005; de Hoog et al., 2008). They will likely not counterargue a goal-congruent message (in this case, any type of recommendations) or doubt its veracity. They would be more willing to accept recommendations that accompany the message because of the increased efficacy the advice will give them to overcome the potential threat. They are also less likely to scrutinize the veracity of recommendations or the source that provides them.

*H3: Hope appeal recipients will generate fewer supportive thoughts about the recommendations than fear appeal recipients, regardless of message*

*recommendation quality. Hope and fear appeal recipients will not differ in their counterargument output.*

When deriving a theory of emotional appeal processing, it is necessary and important to also consider the effect of recommendation quality. The influence of argument strength on processing is a central element of the dual-processing paradigm (Chaiken, 1980; Petty & Cacioppo, 1986). Moreover, the importance of argument strength on persuasion should not be underestimated; therefore, this dissertation examines if the type of emotional appeal received interacts with argument quality to influence processing outcomes. That said, emotional appeal recipients are hypothesized to process in a biased manner and not be sensitive to recommendation quality manipulations:

*H4: Emotional appeal type (fear, hope, rational) and recommendation quality will interact to affect generation of supportive thoughts about the recommendation. There will be an effect of recommendation quality on recipients of the rational appeal, such that high quality recommendations and source recipients will generate more supportive thoughts than low quality recommendations and source recipients; there will be no effect for recommendation quality for receivers of a hope or fear appeal.*

*RQ3: Will the number of relevant or irrelevant thoughts vary as a function of emotional appeal type and recommendation quality?*

*RQ4: Will the amount of emotional thoughts about the recommendations generated vary as a function of emotional appeal type and recommendation quality?*

*RQ5: Will the amount of different types of emotional thoughts generated vary as a function of emotional appeal type and recommendation quality?*

**Recall of recommendations.** The biased motivations of hopeful and fearful individuals may also manifest in the recall measures. If hope appeal recipients do not pay attention to the recommendations, they would be expected to accurately recall fewer recommendations than those receiving a fear appeal. Fear appeal recipients may accurately recall recommendations because they processed them seeking reassurance. But, it is not clear that fear appeal recipients closely processed recommendations. Because of their desire for reassurance, they are posited to have not scrutinized the recommendations, and may have a significant number of false alarms such that they will overestimate the amount of recommendations presented. Due to the tentative nature of these conjectures, research questions about recall are proffered.

*RQ6: Will total number of hits, misses, and false alarms vary as a function of emotional appeal type?*

*RQ7: Will emotional appeal type and recommendation quality interact to influence the total number of hits, misses, or false alarms?*

## **Chapter 4: Method**

The fourth chapter of this dissertation details the data collection and methods used to collect three pilot studies and a main experiment. Participants, study design, procedures, and instrumentation, and analysis for the pilot tests are included. All data collection for this dissertation was approved by the University of Maryland Institutional Review Board. All three pilot tests and the main experiment were conducted online via Survey Monkey (SurveyMonkey, 2012).

### **Pilot Study 1: Determination of Topic**

The purpose of the first pilot study was to determine the persuasive topic for the main experiment. First, interviews were conducted with 5 members of the target population. Students were asked to write paragraphs about their feelings toward their financial future and answer a series of open-ended questions about their financial attitudes, perceptions, and behavioral intentions. Thematic analysis revealed that all 5 students cared deeply about their financial future, wished they received more information about how to manage finances, and felt fearful and hopeful about their prospects. There was unanimous agreement that messages about students' financial futures would elicit interest from the target population.

Next, an empirical cross-sectional survey study of beliefs, perceptions, and attitudes of the target population toward financial security was conducted. Participants were asked to provide demographic information, level of fear about their future financial situation, level of hope about their future financial situation, orientation toward life (pessimism/optimism), financial efficacy, and the general appraisals of the pleasantness

of thinking about personal finances, the importance of personal finances, and uncertainty related to personal finances.

### **Participants**

One hundred students from a large Mid-Atlantic University in the United States participated in this study. Students were offered course credit in exchange for participation. The mean age was approximately 20 years ( $SD = 1.76$ ). Thirty-two percent of the participants were males ( $N = 32$ ) and 68% were female ( $N = 68$ ). Participants were encouraged to indicate all racial and / or ethnic backgrounds. The sample identified 63% Non-Hispanic white ( $N = 63$ ), 14% African American ( $N = 14$ ), 4% Hispanic or Latino ( $N = 4$ ), 17% Asian or Asian American ( $N = 17$ ), and 2% American Indian or Alaska Native ( $N = 2$ ). The remaining 2% of the sample identified themselves as being of another race ( $N = 2$ ). The participants included 15% freshman ( $N = 15$ ), 39% sophomores ( $N = 39$ ), 20% juniors ( $N = 20$ ), 24% seniors ( $N = 24$ ). Two percent did not identify their year in college.

### **Procedures**

Upon starting the study via Survey Monkey, participants were first presented with a consent form. Upon providing consent, the survey continued with questions pertaining to demographics, life orientation, efficacy levels for different financial behaviors, hope about their financial situation, fear about their financial situation, and appraisals of importance, pleasantness, and uncertainty about the topic of personal financial security. Finally, students were asked to estimate their household income for 2010.

## **Instrumentation**

Confirmatory factor analyses (CFA) were conducted on the existing and modified scales using LISREL 8.80 (Jöreskog & Sörbom, 2006). It is important to conduct CFAs on scales, even if they have been used in previous published research (Levine, Hullett, Turner, & Lapinski, 2006). Therefore, CFAs were conducted on all scales in each pilot and the main study. Fit statistics for each scale are reported below, and provide different types of understanding about how well different items combine within a scale. There is little agreement about which fit indices should be used (Maruyama, 1998); rather experts suggest going across the spectrum of options and choosing a fit index from different classes (Kline, 1998). The first class is absolute—these indexes focus in on residual variance. The second class of fit indices takes a relative approach with pitting the model against other possible models within the same data set. The third and final type of index is adjusted, which takes both fit and parsimony into account. The Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Residual (*SRMR*), and Comparative Fit Index (CFI) were used as fit indices within this dissertation. *RMSEA* is in the parsimonious index class, *SRMR* is in the absolute index class, and CFI is in the incremental index class. Guidelines advise that satisfactory fit values be used for the scales:  $RMSEA \leq .06$ ,  $SRMR \leq .08$ , and for  $CFI \geq .95$  (Hu & Bentler, 1999).

**Life orientation test (LOT).** Respondents' orientation to life (optimism vs. pessimism) was assessed using the Life Orientation Test (LOT). The scale developed by Scheier and Carver (1985) is used to control for individual differences in optimistic versus pessimistic personality characteristics. Scheier and Carver (1985) found that these items had satisfactory internal consistency ( $\alpha = .76$ ) and test-retest reliability ( $r = .79$ ).

LOT was measured using a 6-item, 7-point Likert scale ranging from “1” (strongly disagree) to “7” (strongly agree). Questions included “If something can go wrong for me, it will,” and “I always look on the bright side of things.” The scale was reliable ( $M = 4.80$ ,  $SD = 1.11$ ,  $\alpha = .84$ ). Confirmatory factor analysis revealed that all items loaded on one factor with marginal fit ( $RMSEA = .23$ ,  $SRMR = .081$ ,  $CFI = .89$ ).

**Importance.** Appraisals of importance were measured with 7 items that tapped the perceived relevance of financial security after graduation to the student respondents. Participants indicated their agreement with a series of statements on a 7-point Likert scale ranging from “1” (strongly disagree) to “7” (strongly agree). Items included “Establishing financial security after finishing school is very relevant to me,” and “I really want financial security after finishing school.” The scale was reliable ( $M = 6.35$ ,  $SD = .96$ ,  $\alpha = .91$ ). Confirmatory factor analysis demonstrated that all the items loaded on one variable with marginal fit ( $RMSEA = .15$ ,  $SRMR = .019$ ,  $CFI = .97$ ).

**Uncertainty.** Appraisals of uncertainty were measured with 4 items that tapped perceptions that students would be able to attain financial security after graduation. Participants indicated their agreement with a series of statements on a 7-point Likert scale ranging from “1” (strongly uncertain) to “7” (strongly uncertain). Items included “I believe I can establish my financial security after finishing school,” and “Financial security after finishing school will happen for me.” The scale was reliable ( $M = 5.37$ ,  $SD = 1.36$ ,  $\alpha = .89$ ). Confirmatory factor analysis demonstrated that all factors loaded on one dimension with satisfactory fit ( $RMSEA = .07$ ,  $SRMR = .021$ ,  $CFI = 1.00$ ).

**Pleasantness.** Appraisals of pleasantness were measured with 4 items that tapped the perceived pleasantness of thinking about personal finance. Participants indicated their

agreement with a series of statements on 5-point Likert scales ranging from “1” (strongly disagree) to “5” (strongly agree). Items included “I like to think about my financial situation,” and “Thinking about my finances is pleasant.” The scale was reliable ( $M = 2.68$ ,  $SD = .85$ ,  $\alpha = .86$ ). Confirmatory factor analysis demonstrated that all items loaded on a single factor with satisfactory fit ( $RMSEA = .022$ ,  $SRMR = .020$ ,  $CFI = .99$ )

**Hope about finances.** Hope about finances was measured using 4 items to assess how hopeful students feel about their future financial prospects. Participants indicated their agreement with a series of statements on 5-point Likert scales ranging from “1” (strongly disagree) to “5” (strongly agree). Items included: “Thinking about my finances makes me feel positive,” and “When I think about my finances, I feel optimistic.” The scale was reliable ( $M = 3.11$ ,  $SD = .71$ ,  $\alpha = .84$ ). Confirmatory factor analysis revealed that all of the scale’s items loaded on one factor with marginal fit ( $RMSEA = .25$ ,  $SRMR = .11$ ,  $CFI = .88$ ).

**Fear about finances.** Fear about finances was measured using 3 items to assess how fearful students feel about their future financial prospects. Participants indicated their agreement with a series of statements on a 5-point Likert scale ranging from “1” (strongly disagree) to “5” (strongly agree). Items included “Thinking about my finances makes me feel fearful,” and “Thinking about my finances makes me feel anxious.” The scale was reliable ( $M = 3.10$ ,  $SD = .89$ ,  $\alpha = .834$ ). Confirmatory factor analysis revealed that model was saturated and could not compute valid fit indices; more items were added to the fear measure for the remaining pilots and main study.

**Perceived efficacy for financial behavior.** No known scales are available to measure financial efficacy. Bandura (1997) suggested that when researchers want to

examine efficacy, domain-specific scales should be located or created if needed.

Therefore, a scale to measure perceived efficacy to accomplish a variety of financial behaviors was crafted. First, twenty common financial behaviors were identified (Xiao, 2008). Participants were asked to gauge their efficacy through responses to 5-point Likert scales ranging from “1” (absolutely no confidence) to “5” (completely confident). Items were prefaced with “Please rate your confidence in being able to accomplish each of the following items” and included examples like “create a realistic personal budget,” “manage a credit card,” and “not need to borrow money” (see Table 2 for complete list of 20 items).

Examining the correlation matrix for these 20 items, no items were correlated above .80, (which would potentially present multicollinearity issues). The variables were moderately correlated, which arguably infers that shared variance between them would yield fewer factors than items (Pett, Lackey, & Sullivan, 2003). The 20 items were submitted to exploratory factor analysis. Principle axis factoring (PAF) was used to discern the number of factors and the item loadings (Kim & Mueller, 1978). PAF is a common exploratory method for identifying and computing composites (Pett et al., 2003). Assumptions of the PAF were first examined. The Kaiser-Meyer-Olkin Measure is an index for examining the magnitude of observed correlation coefficients relative to partial correlation coefficients; larger values suggest that factor analysis is appropriate. The KMO value equaled .873, indicating factor analysis on these items was appropriate. Next, Bartlett’s test of sphericity was examined. Barrett’s test examines the hypothesis that the variables included in the test are uncorrelated. Results from the PAF demonstrated a significant value for the associated chi-square ( $\chi^2 = 1208.86$ ,  $df = 190$ ,  $p <$

.001). These tests of the assumptions of PAF increase confidence that these items are appropriate for factor analysis.

Initial eigenvalues revealed that the first factor accounted for almost 42% of the variance, the second factor accounted for 8.31% of the variance, the third factor account for a 4.77% of the variance, and the fourth factor accounted for less than 4% of the variance. Two, three and four factor solutions were examined, using varimax rotations of the loading matrix. Varimax was used because it potentially fixes colinearity problems by making the composites orthogonal (Pett et al., 2003). The three factor solution, which explained about 60% of the variance, was selected because the three factors were interpretable and the scree plot leveled after the third factor. After the third factor, there were an insufficient amount of loadings to make additional factor interpretable. The first factor included 12 items that could be classified as “efficacy for establishing financial security” that formed a reliable scale ( $M= 2.62$ ,  $SD= .835$ ,  $\alpha= .920$ ). The second factor included 5 items that could be classified as “budgeting for financial security” that formed a reliable scale ( $M= 3.32$ ,  $SD= .845$ ,  $\alpha= .85$ ). The third factor included 3 items that could be classified as “able to accurately manage finances;” it formed a reliable scale ( $M= 3.15$ ,  $SD= .91$ ,  $\alpha= .71$ ). The three scales were summed to create an overall measure of financial efficacy. See Table 2 for a list of all 20 items and their associated factor loadings.

## **Results**

Overall, students reported that their financial security is very important to them ( $M = 6.35$ ,  $SD = .96$ ), and somewhat unpleasant to think about ( $M = 2.68$ ,  $SD = .85$ ). They reported being optimistic ( $M = 4.80$ ,  $SD = 1.11$ ) and moderately efficacious ( $M= 3.03$ ,  $SD= .73$ ) in regards to financial behaviors needed in post-graduation life.

Participants reported feeling similar levels of hope ( $M = 3.11$ ,  $SD = .71$ ) and fear ( $M = 3.10$ ,  $SD = .89$ ) about their financial future, with high levels of certainty ( $M = 5.37$ ,  $SD = 1.36$ ) that everything will work out for them financially after graduation. This brief snapshot helped the author to better understand the target population and design tailored hope, fear, and rational appeals about their financial security after graduation. The pilot testing of these appeals is discussed next.

### **Pilot Study 2: Emotional Appeals Pilot**

**Overview.** The purpose of this pilot study was to test that the messages elicited the theorized appraisals and the target emotion. This pilot also assessed the persuasive equality across the message variations. Based on pilot one data, messages were crafted around the topic of financial security. The importance of college students actively engaging with their personal finances was selected as the main focus for the messages. The bleak economy has made smart financial decision making by young adults imperative for their financial security (Bonner, 2011; Chang, 2011). The hope and fear appeals focused on the need to start thinking about personal finances before graduation (see Appendix B for all messages). The rational appeal was based upon a website entry about personal finance. Specifically, the entry focused on explaining how personal credit scores are calculated, their importance, and how they can be located. The hope appeal focused on the possibility of students overcoming current economic obstacles to obtain financial security. The fear appeal focused on it likely being an impossible task to overcome current economic obstacles to obtain financial security. Each appeal was tested to ensure it elicited a significant amount of the targeted emotion and a non-significant amount of any other emotion. A preliminary pilot study revealed that all the messages

elicited a significant amount of fear. Changes to the hope appeal and rational appeal were made, and all the messages were tested again. The results of the second message pilot are reported below.

### **Participants**

One hundred fifty-three students from a large Mid-Atlantic University in the United States participated in this pilot study. The mean age was approximately 20 ( $SD = 2.54$ ). Thirty-five percent of the participants were males ( $N = 54$ ) and 64% were female ( $N = 98$ ). One person did not identify as male or female. Participants were asked to indicate all races that applied to them. Sixty-four percent identified as Non-Hispanic White ( $N = 97$ ), 19% identified as Black or African American ( $N = 29$ ), 12% identified as Asian or Asian America ( $N = 18$ ), 6% as Hispanic or Latino ( $N = 9$ ), 2% as Pacific Islander ( $N = 3$ ), and 3% as American Indian ( $N = 4$ ). Less than one percent of participants in the sample identified as being other races ( $N = 2$ ). The participants included 12% freshman ( $N = 18$ ), 33% sophomores ( $N = 51$ ), 28% juniors ( $N = 43$ ), and 25% seniors ( $N = 38$ ). Two respondents did not indicate their year in school. At the end of the study, students were asked to estimate their household income for 2010. Sixteen percent of the students estimated their household's income to be below \$60,000 ( $N = 24$ ), 21% estimated their household income above \$60,000 but below \$100,000 ( $N = 32$ ), 18% estimated their household income between \$100,000 but below \$150,000 ( $N = 28$ ), 18% estimated their household income to be above \$150,000 but below \$200,000 ( $N = 27$ ), 11% estimated their household income above \$200,000 but below \$250,000 ( $N = 17$ ), and 14% estimated that their household income was over \$250,000 ( $N = 22$ ). Three respondents opted to not estimate their household income for 2010.

## Procedures

After providing informed consent, participants were told they would be reading and responding to a message about personal finances. They were then randomly assigned to receive a hope, fear, or rational appeal. All the appeals were the same length exactly (278 words), and the readability was within a grade level (10<sup>th</sup>), below the average reading level for the target audience of college students (see Appendix A for messages). After reading one of the three messages, participants responded to a series of questions about the emotions elicited from the message, appraisals of importance, pleasantness, goal congruence, perceived persuasiveness of the appeal, and their certainty about attaining financial security. Finally, they were asked to provide an estimation of their household income and thanked for their time.

## Instrumentation

Confirmatory factor analyses were conducted on each scale using LISREL 8.80 (Jöreskog & Sörbom, 2006). Fit statistics for each scale are reported below. The Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Residual (SRMR), and Comparative Fit Index (CFI) were used as fit indices. RMSEA is in the parsimonious index class, SRMR is in the absolute index class, and CFI is in the incremental index class.

**Felt hope.** Perceived felt hope was measured with four items that asked participants to respond to statements about how the message made them feel (hopeful, positive, optimistic, and encouraged). Participants indicated their agreement with the statement on 5-point scale (strongly disagree, disagree, neutral, agree, and strongly agree). The scale was reliable ( $M= 3.94$ ,  $SD= 1.41$ ,  $\alpha= .90$ ). Confirmatory factor analysis

affirmed that all items loaded on one factor with satisfactory fit ( $RMSEA= .00$ ,  $SRMR= .0068$ ,  $CFI= 1.00$ ).

**Felt fear.** Perceived felt fear was measured with four items that asked participants to respond to statements about how the message made them feel (anxious, scared, frightened, and alarmed). Participants indicated their agreement with the statement on 5-point scale (strongly disagree, disagree, neutral, agree, and strongly agree). The scale was reliable ( $M= 3.77$ ,  $SD= 1.23$ ,  $\alpha= .82$ ). Confirmatory factor analysis affirmed that all items loaded on one factor with satisfactory fit ( $RMSEA= .20$ ,  $SRMR= .056$ ,  $CFI= .95$ ).

**Goal congruence.** Perceived goal congruence was measured with five items that asked participants to respond to questions about what the message communicated (made financial security: seem more possible, consistent with goals, increased likelihood of goal of financial security, contained information that leads to belief goal is possible, was consistent with ideals). Participants indicated their agreement to the statements on 7-point scales (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). The scale was reliable ( $M= 4.11$ ,  $SD= 1.16$ ,  $\alpha= .91$ ). Confirmatory factor analysis affirmed that all items loaded on one factor ( $RMSEA= .31$ ,  $SRMR= .074$ ,  $CFI=.90$ ).

**Pleasantness.** Perceived pleasantness was measured with six items that asked participants to indicate their response to reading the message (the message was: enjoyable, pleasant to read, contained positive information, was unpleasant to read [rc], was negatively toned [rc], was troubling [rc]). Participants indicated their agreement to the statements on 7-point scales (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). The scale was

reliable ( $M= 4.06$ ,  $SD= 1.17$ ,  $\alpha= .89$ ). Confirmatory factor analysis affirmed that all items loaded on one factor ( $RMSEA= .23$ ,  $SRMR= .086$ ,  $CFI= .90$ ).

**Importance.** Perceived importance was measured with six items that asked respondents about the importance of financial security to them (really want, very relevant to me, very important, very satisfying, doesn't matter [rc]). Participants were asked to indicate their agreement to the statement on a 7-point scale (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). The scale was reliable ( $M= 6.20$ ,  $SD= 1.12$ ,  $\alpha= .91$ ). Confirmatory factor analysis affirmed that all items loaded on one factor with satisfactory fit ( $RMSEA= .15$ ,  $SRMR= .019$ ,  $CFI= .97$ ).

**Uncertainty.** Perceived uncertainty was measured with four items that asked respondents how they felt about their financial prospects after reading the message. Participants were asked how the message influenced their perceptions about the possibility of financial success, belief in achieving personal financial goals, possibility of achieving financial goals, and overall likelihood of attainment. Participants were asked to indicate their agreement to the statements on a 7-point scale (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). The scale was reliable ( $M= 4.28$ ,  $SD= 1.24$ ,  $\alpha= .91$ ). Confirmatory factor analysis affirmed that all items loaded on one factor with satisfactory fit ( $RMSEA= .085$ ,  $SRMR= .0068$ ,  $CFI= 1.00$ ).

**Perceived persuasiveness.** Perceived persuasiveness of each appeal was measured with 6 items that asked participants to judge message persuasiveness (the message was: intelligent, good, wrong [rc], foolish [rc], swaying, and acceptable).

Participants were asked to indicate their agreement to the statement on a 7-point scale (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). The scale was reliable ( $M= 4.81$ ,  $SD= .85$ ,  $\alpha= .79$ ). Confirmatory factor analysis affirmed that all items loaded on one factor with marginal fit ( $RMSEA= .25$ ,  $SRMR= .11$ ,  $CFI= .79$ ).

## Results

Means and standard deviations for each dependent variable as a function of appeal can also be found in Table 3. First, an Analysis of Variance (ANOVA) was performed on the participants' reported emotional response to the message they read. Participants who received a hope appeal judged the message as more hopeful ( $M=4.40$ ,  $SD= 1.34$ ) than those who received the fear appeal ( $M= 2.86$ ,  $SD= 1.20$ ) or rational appeal ( $M= 3.60$ ,  $SD= 1.06$ ;  $F[2,142] = 17.45$ ,  $p < .001$ ,  $\eta^2=.20$ ). A Tukey's HSD post hoc test revealed that the hope appeal created more perceived hope than the fear or rational appeal ( $p < .05$ ). Similarly, participants who received the fear appeal judge the message as more fear-inducing ( $M= 4.59$ ,  $SD= 1.17$ ) than those who received the hope appeal ( $M= 3.57$ ,  $SD= 1.19$ ) or rational appeal ( $M= 3.77$ ,  $SD= 1.12$ ;  $F[2,145] = 8.462$ ,  $p < .001$ ,  $\eta^2= .10$ ). Thus, the emotion inductions were effective.

It is assumed in this dissertation that all else being equal, both hope and fear appeals can be persuasive. The appeals were tested to ensure similar levels of persuasiveness for this study. Participants who received a hope appeal did not judge the message as more persuasive ( $M=4.79$ ,  $SD= .90$ ) than those who received the fear appeal ( $M= 4.92$ ,  $SD= .77$ ) or rational appeal ( $M= 4.77$ ,  $SD= .81$ ;  $F[2,145] = .285$ ,  $p > .05$ ).

Thus, similar levels rule out the possibility of differential effects due to perceived persuasiveness.

The messages were also examined to determine that the hope and fear appeals elicited their theorized appraisal patterns (Smith & Ellsworth, 1985). First, hope and fear share the appraisal of importance. Therefore, these messages should elicit high, similar levels of importance. Indeed, participants who received a hope appeal did not judge the message topic as more important ( $M=6.14$ ,  $SD= 1.24$ ) than those who received the fear appeal ( $M= 6.39$ ,  $SD= .78$ ) or rational appeal ( $M= 6.22$ ,  $SD= .97$ ;  $F[2,146] = .568$ ,  $p > .05$ ).

Hope appeals should increase certainty, while fear appeals should lower certainty. Certainty as a function of emotional appeal was therefore also examined. An ANOVA was performed on the participants' reported level of certainty about future financial security. Results revealed that participants who read a hope appeal ( $M= 4.69$ ,  $SD= 1.00$ ) reported statistically higher levels of certainty than fear appeal recipients ( $M= 3.10$ ,  $SD= 1.31$ ) or rational appeal recipients ( $M= 4.09$ ,  $SD= 1.07$ ;  $F[2,145] = 23.63$ ,  $p < .001$ ,  $\eta^2 = .25$ ). Concurrently, hope and fear appeals should be relatively uncertain. On a 1 to 7 scale, values of 1-3 would be considered high uncertainty, whereas a value of 4 is considered moderately uncertain. Scores of 5-7 would indicate higher levels of certainty. A one-sample t-test of the hope appeal recipients ( $M= 4.69$ ,  $SD= 1.00$ ) against a score of 5.00 showed statistical difference,  $t(92) = -3.007$ ,  $p < .01$ . It can therefore be concluded that receivers of the hope appeal appraised this issue as moderately uncertain after receiving the appeal.

Hope appeals should be judged as more goal congruent than fear appeals. An ANOVA was performed on perceived goal congruence as a function of appeal. Results revealed that participants who read a hope appeal ( $M= 4.57, SD= .86$ ) judged their message as more goal congruent than fear appeal recipients ( $M= 3.03, SD= 1.26$ ) and rational appeal recipients ( $M= 3.69, SD= 1.05; F[2,144] = 29.836, p < .05, \eta^2= .29$ ). Tukey's post hoc test revealed that the hope appeal was more goal-congruent than the fear appeal ( $p < .001$ ) and the rational appeal ( $p < .05$ ).

Hope and fear appeals are posited to differ on the appraisal of pleasantness. Hope appeals should be judged as more pleasant than fear appeals (Smith & Ellsworth, 1985). An ANOVA was performed on perceived pleasantness as a function of appeal. Results revealed that participants who read a hope appeal ( $M= 4.50, SD= .91$ ) judged their message as more pleasant than fear appeal recipients ( $M= 2.71, SD= 1.08$ ) or rational appeal recipients ( $M= 4.00, SD= .91; F[2,142] = 38.472, p < .05, \eta^2= .35$ ). Tukey's post hoc test revealed that the hope appeal was judged as statistically significantly more pleasant than the fear appeal ( $p < .05$ ).

### **Pilot Study 3: Recommendations and Sources Pilot**

**Overview.** A separate pilot test was conducted to test the manipulations of recommendation and source quality. The constructed recommendations were factually true, but varied in applicability and level of feasibility for the typical college student. All recommendations were exactly 44 words, and within a grade level (8.0) of readability. Participants were asked to rate all of the proposed recommendations. All tested recommendations are located in Table 4.

Source quality was also pilot tested. Participants were given a series of names and associated titles of (bogus) individuals to rate on a competence scale. The job titles were created to manipulate weak and strong sources for financial advice. All sources had gender ambiguous names. Participants were to rate perceived expertise of each person (McCroskey & Teven, 1999). All tested sources are located in Table 5.

### **Participants**

Ninety-nine students from a large Mid-Atlantic University in the United States participated in this pilot study. The mean age was approximately 20 ( $SD = 1.79$ ). Twenty-three percent of the participants were males ( $N = 23$ ) and 76% were female ( $N = 75$ ). One person did not identify as male or female. Participants were asked to indicate all races that applied to them. Seventy-three percent identified as Non-Hispanic White ( $N = 73$ ), 12% identified as Black or African American ( $N = 12$ ), 11% Asian or Asian America ( $N = 11$ ), 4% as Hispanic or Latino ( $N = 4$ ). Five percent of participants in the sample identified as being other races ( $N = 5$ ). The participants included 21% freshman ( $N = 21$ ), 23% sophomores ( $N = 23$ ), 20% juniors ( $N = 20$ ), and 35% seniors ( $N = 35$ ). At the end of the study, students were asked to estimate their household income for 2010. Ten percent of the students estimated their household's income to be below \$60,000 per year, 24% estimated their household income above \$60,000 but below \$100,000, 20% estimated their household income between \$100,000 but below \$150,000, 9% estimated their household income to be above \$150,000 but below \$200,000, 13% estimated their household income above \$200,000 but below \$250,000, and 19% estimated that their household income was over \$250,000 in 2010. Five percent of the students did not estimate their household income.

## **Procedures**

A repeated measures design was utilized for this pilot study. After providing consent, participants were asked respond to basic demographic information. They were then asked to read a series of financial advice targeted toward college students. Students read and responded to 11 recommendations. Then, participants were asked to rate the expertise of 5 varied sources of financial information. The order of recommendation and source presentation was randomized within and across participants. Finally, participants were asked to indicate their income bracket and thanked for their participation.

## **Instrumentation**

**Perceived recommendation quality.** Perceived quality of each recommendation was assessed using a 5-item Likert scale. Participants were asked to indicate their agreement to the statements on a 7-point scale (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). Questions included: the recommendation is strong; the recommendation is deceptive; the recommendation is good; the recommendation is logical; and, the recommendation is weak (adapted from Thorson, Christ, & Caywood, 1991). The measure was reliable ( $M=4.78$ ,  $SD=.99$ ,  $\alpha=.90$ ).

**Source expertise.** Perceived source expertise was assessed using a 4-item, 7-point Likert scale adapted from a well-known source credibility scale (McCroskey & Teven, 1999). Participants were asked to indicate their perceptions of each source's intelligence, trustworthiness, expertise, and competence to provide financial advice on a 7-point scale (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). Specifically, the questions asked for each source

were: “for financial advice, this source is: competent, expert, intelligent, untrustworthy.” The measure was reliable ( $M= 4.47$ ,  $SD= 1.04$ ,  $\alpha = .85$ ).

## Results

Determining the high and low quality recommendations was done in a multi-stage process. First, the means and standard deviations for each recommendation were examined (see Table 4). Recommendation 4 was perceived as the highest quality message ( $M= 5.80$ ,  $SD= .93$ ), followed by Recommendation 2 ( $M= 5.71$ ,  $SD= .91$ ), Recommendation 5 ( $M= 5.50$ ,  $SD= .97$ ), and Recommendation 3 ( $M = 5.49$ ,  $SD= 1.06$ ). Conversely, Recommendation 10 was rated the lowest ( $M=3.11$ ,  $SD= 1.28$ ), followed by Recommendation 11 ( $M= 3.52$ ,  $SD= 1.35$ ), Recommendation 7 ( $M=3.72$ ,  $SD= 1.28$ ) and Recommendation 8 ( $M= 4.54$ ,  $SD= 1.22$ ). Paired sample t-tests with Bonferroni corrections revealed that all those rated as having the highest quality were significantly different than those all messages rated as being the lowest quality messages.

Determining the source with the highest and lowest perceived source quality was also done in a two-step process. First, the means and standard deviations for the 6 tested sources were examined (see Table 5). Source 1 was perceived as having the highest level of credibility ( $M= 5.66$  and  $SD= 1.09$ ), while Source 5 had the lowest perceived credibility ( $M= 3.03$ ,  $SD= 1.95$ ). A paired-samples t-test revealed that the high and low quality sources were statistically different ( $t[93]= 14.63$ ,  $p < .001$ ). These sources were therefore selected as manipulations for the main dissertation study.

## **Main Study**

A 3(Appeal: hope appeal, fear appeal, or rational appeal) x 2(Recommendation Quality: low or high) x 2(Source Expertise: low or high) independent groups experimental design was utilized. Participants were randomly assigned to an appeal and recommendations with a source attribution.

### **Participants**

Student participants were recruited via an online via the Department of Communication participant pool at a Mid-Atlantic University. An a priori power analysis ( $\alpha = .05$ ,  $\beta = .80$ ,  $d = .15$ ) revealed that at least 432 participants were needed (G\*Power; Erdfelder, Faul, & Buchner, 1996). Participants received a small amount of course credit for study completion. Moreover, a small incentive allowed students to voluntarily enter to win a \$200 gift card for Amazon.com. One winner was randomly selected.

A total of 637 people started the survey and 621 participants completed the entire study (sixteen people stopped taking the survey between the consent form and first question; these cases were deleted). The final 621 participants were between the ages of 18 and 33, with a mean age of approximately 20 years ( $M = 19.92$ ,  $SD = 1.78$ ). Females ( $N = 407$ , 67%) outnumbered males ( $N = 205$ , 33%), with 9 student opting not to identify their sex. Participants were asked to indicate all races and/or ethnicities they identify with. Sixty-two percent identified as Non-Hispanic White ( $N = 399$ ), 15% as Asian-American ( $N = 93$ ), 14% as African-American ( $N = 84$ ), 6% as Latino/a ( $N = 38$ , 6%), 3% as Middle Eastern (3%,  $N = 20$ ), 1% as Native American ( $N = 7$ ), .5% as Pacific Islander ( $N = 3$ ), and 4% as other ( $N = 24$ ). Thirty-two percent were freshman ( $N = 196$ ), 24% were

sophomores, 21% were juniors (N= 130), and 22% were seniors (N = 139). Eleven students did not indicate their year in school.

At the end of the study, students were asked to estimate their household income for 2011. Fifteen percent (N = 92) of the students estimated their household's income to be below \$60,000 per year, 20% (N= 119) estimated their household income above \$60,000 but below \$100,000, 27% estimated (N= 160) their household income between \$100,000 but below \$160,000, 11% (N= 66) estimated their household income to be above \$160,000 but below \$200,000, 10% (N = 61) estimated their household income above \$200,000 but below \$250,000, and 16% (N= 101) estimated that their household income was over \$250,000 in 2011. Twenty-two participants indicated they were unable to estimate or not comfortable providing information about their household income for the previous year.

### **Procedures**

Students in Department of Communication courses during the Spring 2012 semester were invited to participate in the study via the online participation pool. A link from the participation pool website directed students to Survey Monkey. Participants provided consent before beginning the study. Participants first filled out a battery of measures in which the life orientation test was embedded. Then, participants were randomly assigned to receive a hope, fear, or rational appeal. The hope and fear appeals were designed to spur appraisals of importance, uncertainty, and goal congruency (see Pilot Test 2). For the hope appeal, the message was designed to increase certainty and highlight goal congruence in the environment, thereby inducing a significant amount of hope. The fear appeal was designed to increase uncertainty and highlight goal

incongruence in the environment to induce a significant amount of fear. The rational appeal was an informational piece on credit scores that did not elicit a significant amount of any type of emotion. As previously mentioned, all messages were pilot tested.

After receiving the message, participants were asked to list their thoughts about the appeal and indicate the perceived persuasiveness of the appeal. The order of question presentation for each measure was randomized. All participants were then randomly assigned to receive four recommendations manipulated to be low or high argument quality, attributed to a low or high quality source (see Pilot Test 3). These recommendations conveyed financial advice for college students that varied in their applicability and feasibility for typical college students. The sources were manipulated to be perceived as high expertise or low expertise on the topic of personal finance. The sources were given gender ambiguous names to reduce potential bias.

Participants were asked to respond to the recommendations and source via thought listing. They also responded to perceived recommendation and source quality measures. The order of question presentation for each measure was randomized. All participants then completed approximately 10 minutes of measures meant to fill time before a recall task. Finally, they engaged in a memory recognition task, whereby they indicated which recommendations and source were or were not provided to them. Participants were debriefed, thanked for their participation, and offered the opportunity to enter a raffle.

### **Preliminary Data Analysis**

The data were first examined to ensure they met the assumptions of the general linear model (Bauer & Fink, 1983; Fink, 2009; Lomax, 2006). Each dependent variable

was tested for normality, homogeneity of variance, and independence. For normality, frequency distributions for the residuals were examined; skew, kurtosis, and results of a Kolmogorov-Smirnov test were also examined. To examine homogeneity of variance, residuals were examined to ensure that they did not systematically increase or decrease; in addition, the result of a Levene's test was examined as part of each statistical test. To examine the assumption of independence, residual plots were examined to ensure the patterns of residuals were random and not in a cyclical pattern (Lomax, 2006). Finally, skew and kurtosis was examined; none of the variables in this study were significantly skewed or kurtotic. Felt hope, uncertainty, goal congruence, pleasantness, perceived recommendation quality and the source perception variables did not meet the assumption for homogeneity of variance as indicated by results of Levene's tests. Log, square root, and other transformations were attempted on each of these variables to meet the assumption of homogeneity; however, none of the transformations significantly altered the parameter test. The inability to meet the assumption of homogeneity of variance or transform the variables to meet this assumption is likely due to the use of 1-7 Likert scales, which limit variance (Fink, 2009). For these variables, Dunnett's C post-hoc tests, which do not assume homogeneity of variance or equal variances, were used in place of Tukey's HSD post hoc tests. Confirmatory factor analyses (CFA) were conducted on each scale using LISREL 8.80 (Jöreskog & Sörbom, 2006). Fit statistics for each scale are reported below. The Root Mean Square Error of Approximation (*RMSEA*), Standardized Root Mean Residual (*SRMR*), and Comparative Fit Index (*CFI*) were used as fit indices. *RMSEA* is in the parsimonious index class, *SRMR* is in the absolute index class, and *CFI* is in the incremental index class.<sup>2</sup>

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<sup>2</sup> Satisfactory fit values:  $RMSEA \leq .06$ ,  $SRMR \leq .08$ , and for  $CFI \geq .95$  (Hu & Bentler, 1999).

In conducting the CFA, the measurement model of all the items and their proposed variables were entered into LISREL to ensure the validity of proposed scales. Items were examined to ensure they explained variance of their proposed variable and did not cross-load with any other variable.

The first model with all items resulted in an incomputable model; specifically, the matrix was not positive definite. An examination of the items revealed a potential measurement issue. Two items “This message was troubling” and “This message was negatively-toned” were originally intended to measure the appraisal of pleasantness (rc); however, the modification index revealed that they were both better indicators of felt fear. This finding made sense and the items were dropped from the pleasantness measure and analysis. The edited measurement model was then analyzed and had satisfactory fit on two of three fit indices ( $SRMR = .039$ ,  $RMSEA = .054$ ,  $CFI = .99$ ).

### **Instrumentation**

**Felt hope.** Perception of felt hope was measured with five items that asked participants to respond to statements about how the message made them feel (hopeful, positive, optimistic, enthusiastic, and encouraged). Respondents were asked to indicate their level of emotion on a 1-7 scale, with 1 indicating none of the feeling and 7 indicating a great deal of the feeling. The scale was reliable ( $M = 3.41$ ,  $SD = 1.42$ ,  $\alpha = .934$ ). Confirmatory factor analysis showed that the items loaded on one factor with satisfactory fit ( $RMSEA = .066$ ,  $SRMR = .011$ ,  $CFI = 1.00$ ).

**Felt fear.** Perception of felt fear was measured with five items that asked participants to respond to statements about how the message made them feel (despair, frightened, scared, anxious, and fearful). Respondents were asked to indicate their level

of emotion on a 1-7 scale, with 1 indicating none of the feeling and 7 indicating a great deal of the feeling. The scale was reliable ( $M= 3.62$ ,  $SD= 1.42$ ,  $\alpha= .925$ ). Confirmatory factor analysis demonstrated that all factors load on a single factor with marginal fit ( $RMSEA= .126$ ,  $SRMR= .022$ ,  $CFI= .98$ ).

**Uncertainty.** Perceived uncertainty was measured with four items that asked respondents how they felt about their financial prospects after reading the message. Participants were asked how the message influenced their perceptions about the possibility of financial success, belief in achieving personal financial goals, possibility of achieving financial goals, and overall likelihood of attainment. Participants were asked to indicate their agreement to the statements on a 7-point scale (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). The scale was reliable ( $M= 3.45$ ,  $SD= 1.28$ ,  $\alpha= .84$ ). Confirmatory factor analysis demonstrated that all items loaded on a single factor with satisfactory fit ( $RMSEA= .006$ ,  $SRMR= .0085$ ,  $CFI= 1.00$ ).

**Goal congruence.** Perceived goal congruence was measured with five items that asked participants to respond to questions about what the message communicated (make financial security: seem more possible, consistent with goals, increased likelihood of goal of financial security, contained information that leads to belief goal is possible, was consistent with ideals). Participants indicated their agreement to the statements on 7-point scales (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). The scale was reliable ( $M= 3.78$ ,  $SD= 1.33$ ,  $\alpha= .889$ ). Confirmatory factor analysis demonstrated that all items loaded on a single factor and the fit was marginal ( $RMSEA = .206$ ,  $SRMR= .056$ ,  $CFI= .95$ ).

**Pleasantness.** Perceived message pleasantness was measured with four items that asked participants to indicate their response to reading the message (the message was: enjoyable, pleasant to read, contained positive information, and made me feel good about the future). Participants indicated their agreement to the statements on 7-point scales (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). The scale was reliable ( $M= 3.32$ ,  $SD= 1.34$ ,  $\alpha= .891$ ). Confirmatory factor analysis demonstrated that all items loaded on a single factor with marginal fit ( $RMSEA= .15$ ,  $SRMR= .023$ ,  $CFI= .98$ ).

**Importance.** Perceived importance was measured with four items that asked respondents about the importance of financial security to them (irrelevant to me [rc], no bearing on me [rc], no concern to me [rc], important). Participants were asked to indicate their agreement to the statement on a 7-point scale (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). The scale was reliable ( $M= 6.23$ ,  $SD= 1.03$ ,  $\alpha= .843$ ). Confirmatory factor analysis demonstrated that all items loaded on a single factor with satisfactory fit ( $RMSEA= .054$ ,  $SRMR= .014$ ,  $CFI= 1.00$ ).

**Perceived recommendation quality.** Perceived recommendation quality was measured by asking participants to respond to five items about the recommendation (useful, good, weak [rc], illogical [rc], and effective). Participants were asked to indicate their agreement to the statement on a 7-point scale (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). The scale was reliable ( $M= 4.76$ ,  $SD= 1.65$ ,  $\alpha= .942$ ). Confirmatory factor analysis

demonstrated that all items loaded on a single factory with marginal fit ( $RMSEA= .114$ ,  $SRMR= .02$ ,  $CFI= .99$ ).

**Perceived source quality.** Perceived source competence was assessed using two dimensions of a well-known source credibility scale (McCroskey & Teven, 1999). Participants were asked to indicate their perceptions of each source's intelligence, level of training, expertise, how informed they seemed, level of stupidity, and competence to provide financial advice on a 7-point scale (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). The six item measure was reliable ( $M= 4.62$ ,  $SD= 1.39$ ,  $\alpha = .919$ ). Confirmatory factor analysis demonstrated that all items loaded on a single factor with satisfactory fit ( $RMSEA= .086$ ,  $SRMR= .023$ ,  $CFI= .99$ ).

Perceived source trustworthiness was assessed using a 6-item, 7-point Likert scale (McCroskey & Teven, 1999). Participants were asked to indicate their perceptions of each source's level of honesty, selfishness (rc), trustworthiness, virtuousness, and morality to provide financial advice on a 7-point scale (strongly disagree, moderately disagree, slightly disagree, neutral, slightly agree, moderately agree, and strongly agree). The measure was reliable ( $M= 4.66$ ,  $SD= 1.09$ ,  $\alpha = .838$ ). Confirmatory factor analysis demonstrated that all items loaded on a single factor with marginal fit ( $RMSEA= .204$ ,  $SRMR= .076$ ,  $CFI= .91$ ).

### **Covariates**

**Life orientation test (LOT).** Respondents' orientation to life (optimism vs. pessimism) was assessed using the Life Orientation Test (LOT). The scale developed by Scheier and Carver (1985) is used to control for individual differences in optimistic

versus pessimistic personality characteristics. Scheier and Carver (1985) found that these items had satisfactory internal consistency ( $\alpha = .76$ ) and test-retest reliability ( $r = .79$ ).

LOT was measured using a 6-item 7-point Likert scale ranging from “1” (strongly disagree) to “7” (strongly agree). Questions included “If something can go wrong for me, it will,” and “I always look on the bright side of things.” The scale was reliable ( $M = 4.87$ ,  $SD = 1.05$ ,  $\alpha = .82$ ). Confirmatory factor analysis revealed that all factors loaded on one dimension with marginal fit ( $RMSEA = .276$ ,  $SRMR = .11$ ,  $CFI = .82$ ).

**Financial behavior efficacy.** The author created a scale to measure perceived efficacy to accomplish a variety of financial behaviors. The scale consists of 20 items that detailed different types of financial behaviors necessary for financial security after graduation. Participants responded to 7-point Likert scales ranging from “1” (absolutely no confidence) to “7” (completely confident). Items were prefaced with “Please rate your confidence in being able to accomplish each of the following items:” and included “create a realistic personal budget,” “manage a credit card,” and “pay student loan bills.” See Table 6 for the correlations between items. The three-factor scale identified in the pilot study was submitted to confirmatory factor analysis; the items satisfactorily loaded on the three factors ( $RMSEA = .085$ ,  $SRMR = .052$ ,  $CFI = .97$ ). The first factor titled “efficacy for establishing financial security” was composed of 12 items that that formed a reliable scale ( $M = 4.71$ ,  $SD = 1.25$ ). The second factor titled “budgeting” included 5 items that formed a reliable scale ( $M = 5.75$ ,  $SD = .974$ ). The third factor titled “ability to accurately manage finances” formed a reliable scale ( $M = 4.39$ ,  $SD = .91$ ). The three factors were summed to create an overall financial behavior scale, which was reliable ( $M = 14.79$ ,  $SD = 3.12$ ,  $\alpha = .933$ ).

**Income.** At the end of the study, participants were asked to estimate their household income for 2011.

### **Dependent Variables**

**Thought listing.** Participants were asked to list all of the thoughts they had while reading the appeal and then again while reading the recommendations. Participants were instructed to use commas to separate individual thoughts. Thoughts were separated into individual units for coding. The coding scheme examined the relevancy (relevant or irrelevant) valence (supportive, non-supportive, or other), type of thought (cognitive or emotional), and if emotional, the discrete emotion communicated in the thought (hope, fear, anger, or other). A relevant thought was classified as any thought relating to the message topic or similar topics (e.g. personal finances, future success, money); an irrelevant thought was any utterances that did not in any conceivable way relate to the message or topic (e.g. I am hungry, I have a lot of homework). A message-supportive thought indicated that the participant had a positive feeling about the message, liked the message, or learned from the message (e.g. I was enlightened by this message). A counterargument indicated negative responses toward the message (e.g. This is dumb). Finally, a neutral thought was defined as a thought that appeared to have no valence (e.g. There are three credit bureaus). Neutral thoughts will not be analyzed, but were provided in the instructions so that coders understood that not all thoughts are either supportive or non-supportive. Next, the type of thought was classified as cognitive or affective. Affective thoughts were defined as those that contained an emotion term or emotional connotation (e.g. hopeful, scared, hate); the rest of the thoughts were classified as

cognitive. If the thought was classified as affective, coders were asked to indicate which emotion (hope, fear, anger, or other) the affective thought referenced.

Two pairs of independent research assistants were trained to code the data. The pairs met with the researcher to learn to appropriately code the data. The first pair of research assistants coded the thoughts generated in response to the appeal ( $N= 1,675$ ). After training and practice on other data sets, they coded 10% of the responses as a pilot test. Percent agreements for relevancy (100%), valence (94%), type (93%), and emotion (87%) demonstrated that the pair was coding thoughts consistently. Cohen's Kappa was calculated as a measure of inter-coder reliability (Cohen, 1960; 1968). The coders were reliable in their judgments of relevancy ( $\kappa = 1.00$ ), valence ( $\kappa = .69$ ), type ( $\kappa = .733$ ), and emotion ( $\kappa = .822$ ). The remaining coding was divided among the two assistants and checked by the researcher. Disagreements were resolved through discussion with the researcher.

The other pair of research assistants was trained to code the thought responses to the recommendations ( $N= 1,373$ ). The same coding scheme was used for this data. The coding scheme examined the relevancy (relevant or irrelevant) valence (supportive, non-supportive, or other), type of thought (cognitive or affective), and if applicable, the discrete emotion communicated in the thought (hope, fear, anger, or other). Research assistants were trained, practiced on other data sets, and then coded 10% of the responses as a pilot test. Percent agreements for relevancy (100%), valence (95%), type (97%), and emotion (90%) demonstrated that the pair was coding thoughts consistently. Cohen's Kappa was calculated as a measure of inter-coder reliability (Cohen, 1960; 1968). The coders were reliable in their judgments of relevancy ( $\kappa = 1.00$ ), valence ( $\kappa = .87$ ), type ( $\kappa$

= .66), and emotion ( $\kappa = .48$ ). The remaining coding was divided among the two assistants and checked by the researcher. Disagreements were resolved through discussion with the researcher.

**Recall.** Recall was measured using memory recognition, a method used in previous communication research (Mitchell, 2000; Skalski et al., 2009). For the recognition task, twelve items were displayed. In addition to four recommendations presented to each participant, the recommendations for the other condition and four additional strong recommendations that were not mentioned to any participants were included. Participants were asked to select each of the recommendations they had previously read during the study. There were no minimum or maximum criteria indicated, so that participants felt free to check as few or many responses as they desired. For source recall, participants were asked to indicate which of six listed sources had provided the recommendations they read. Participants could check as few or many of the sources as they desired, and also indicate if they had viewed a source not listed through a comment box.

Recommendations and sources correctly identified were tallied as “hits;” recommendations and sources the participant viewed, but were not correctly identified were tallied as “misses;” recommendations and sources the participant did not view but indicated viewing were tallied as “false alarms.” A research assistant tallied the hits, misses, and false alarms for each participant. To do this, he first examined what condition each participant was in and the recommendations and source that corresponded to that condition. He then examined which recommendations they selected, which source was

selected, and from there was able to tally the hits ( $M= 3.97$ ,  $SD= 1.34$ ), misses ( $M= .879$ ,  $SD= 1.20$ ), and false alarms ( $M= 1.20$ ,  $SD= 1.93$ ) for each participant.

## Chapter 5: Results of the Main Study

### Manipulation Checks

Manipulation checks for the emotional appeal, recommendations, and source were completed using Analysis of Covariance (ANCOVA). The three covariates were life orientation (LOT), financial efficacy, and income; when the covariates elicited statistically significant main effects, those effects are reported. Means and standard deviations for the emotional appeal inductions are reported in Table 7. Manipulation checks for the recommendations and source are located in Table 8.

**Emotion elicitation.** Analysis of Covariance (ANCOVA) was performed on the participants' reported emotional responses to the message they read. Participants who received a hope appeal judged the message as more hopeful ( $M=4.31$ ,  $SD= 1.40$ ) than those who received the fear appeal ( $M= 2.53$ ,  $SD= 1.18$ ) or rational appeal ( $M= 3.34$ ,  $SD= 1.04$ ;  $F[2,612] = 110.38$ ,  $p < .001$ ,  $\eta^2 = .30$ ). Because equal variances between the groups could not be assumed (felt hope did not meet the assumption of homogeneity of variance), Dunnett's *C* post-hoc tests were used (Lomax, 2006). These post-hoc tests revealed that the hope appeal created more perceived hope than the fear or rational appeal ( $p < .05$ ). The rational appeal created less hope than then hope appeal, but more than the fear appeal ( $p < .05$ ).

Similarly, participants who received the fear appeal judged the message as more fear-inducing ( $M= 4.34$ ,  $SD= 1.35$ ) than those who received the hope appeal ( $M= 3.18$ ,  $SD= 1.35$ ) or rational appeal ( $M= 3.39$ ,  $SD= 1.28$ ;  $F[2,612] = 43.96$ ,  $p < .001$ ,  $\eta^2 = .13$ ). The fear appeal created statistically significantly more fear than the hope and rational

appeal ( $p < .05$ ); the hope and rational appeal did not differ statistically on elicitation of fear. Thus, the emotion inductions were effective.

**Uncertainty.** Next, the appraisal of uncertainty was examined. Participants who received a hope appeal reported the message contained information to make them feel more certainty ( $M=4.19$ ,  $SD= 1.03$ ) than those who received the fear appeal ( $M= 2.45$ ,  $SD= 1.24$ ) or rational appeal ( $M= 3.55$ ,  $SD= .98$ ;  $F[2,610] = 120.69$ ,  $p < .001$ ,  $\eta^2= .28$ ). Because equal variances cannot be assumed, Dunnett's C post hoc tests were used (Lomax, 2006). These post-hoc tests revealed that the hope appeal was appraised as creating more certainty than the fear or rational appeal ( $p < .05$ ). The rational appeal was also judged to evoke more certainty than the fear appeal ( $p < .05$ ). Again, to ensure that the participants still felt uncertainty after receiving the hope appeal (a necessary condition for hope), a one-sample t-test was conducted with hope appeal recipients. The one-sample t-test revealed a statistically significant difference between the mean of the appraisals of uncertainty by hope appeal recipients ( $M= 4.19$ ,  $SD= 1.03$ ) and the score of 5, or moderate certainty,  $t(212)= -11.48$ ,  $p < .001$ .

**Goal Congruence.** Next, the appraisal of goal congruence was examined. Participants who received a hope appeal reported perceiving the message as more goal congruent ( $M=4.64$ ,  $SD= 1.07$ ) than those who received the fear appeal ( $M= 2.68$ ,  $SD= 1.16$ ) or rational appeal ( $M= 3.94$ ,  $SD= .95$ ;  $F[2,610] = 176.705$ ,  $p < .001$ ,  $\eta^2= .37$ ). Because equal variances cannot be assumed, Dunnett's C post hoc tests were used (Lomax, 2006). These post-hoc tests revealed that the hope appeal was appraised as more goal congruent than the fear or rational appeal ( $p < .05$ ). The rational appeal was also judged to evoke more goal congruity than the fear appeal ( $p < .05$ ).

**Pleasantness.** Next, the appraisal for pleasantness was examined. Participants who received a hope appeal judged the message as more pleasant ( $M=4.21$ ,  $SD= 1.23$ ) than those who received the fear appeal ( $M= 2.33$ ,  $SD= 1.07$ ) or rational appeal ( $M= 3.33$ ,  $SD= .97$ ;  $F[2,611] = 147.84$ ,  $p < .001$ ,  $\eta^2= .33$ ). Because equal variances cannot be assumed, Dunnett's C post hoc tests were used (Lomax, 2006). These post-hoc tests revealed that the hope appeal was perceived as statistically significantly more pleasant than the fear or rational appeal ( $p < .05$ ). The rational appeal was also judged as more pleasant than the fear appeal ( $p < .05$ ).

**Importance.** The appraisal for importance was also examined. Participants who received a hope appeal ( $M= 6.22$ ,  $SD= 1.06$ ) did not judge the topic financial security as more important than participants who received a fear appeal ( $M= 6.16$ ,  $SD= 1.06$ ) or rational appeal ( $M= 6.32$ ,  $SD= .96$ ;  $F[2,610] = 1.228$ ,  $p > .05$ ). As hypothesized, all participants found the topic of financial security highly important.

**Recommendation quality.** Perceived recommendation quality as a function of the recommendation quality manipulation was also examined. An ANCOVA revealed a main effect for recommendation quality ( $F[3,599] = 105.50$ ,  $p < .001$ ,  $\eta^2= .34$ ), such that the conditions with high quality recommendations (with a high quality source,  $M= 5.70$ ,  $SD= 1.06$ ; and with a low-quality source,  $M= 5.72$ ,  $SD= .974$ ) were rated as having higher argument quality than the low quality recommendations (with a high quality source,  $M= 3.75$ ,  $SD= 1.58$ ; and with a low quality source,  $M= 3.80$ ,  $SD=1.65$ ).

**Perceived source quality.** Perceived source quality was measured as a function of perceived source competence and perceived source trustworthiness. The manipulation check for perceived source competence demonstrated that a clean source manipulation

did not occur. An ANCOVA revealed a main effect for recommendation, not source, quality,  $F(3, 591) = 70.80, p < .001, \eta^2 = .26$ . Because equal variances could not be assumed, Dunnett's C was used for post-hoc tests; results revealed that the means were not in the predicted direction. Instead, the recommendation quality guided perceptions of source competence. The high quality source ( $M = 5.46, SD = .99$ ) and low quality source ( $M = 5.15, SD = .91$ ) were both rated highly when associated with high quality recommendations; the high quality source ( $M = 3.99, SD = 1.42$ ) and low quality source ( $M = 3.81, SD = 1.39$ ) associated with the low quality recommendations were rated as less competent. Perceived source trustworthiness as a function of appeal type and recommendation strength was also examined. An ANCOVA revealed main effects for appeal type and recommendation strength. Recommendation strength also elicited significant differences in perceived source trustworthiness,  $F(3, 601) = 85.07, p < .001, \eta^2 = .29$ . Because equal variances could not be assumed, Dunnett's C was used for post-hoc tests; results revealed that the means were not in the predicted direction. Like source competence, the recommendation quality guided perceptions of source trustworthiness. The high quality source ( $M = 5.22, SD = .83$ ) and low quality source ( $M = 5.01, SD = .77$ ) were both rated highly when associated with high quality recommendations; the high quality source ( $M = 4.00, SD = 1.08$ ) and low quality source ( $M = 4.57, SD = 1.09$ ) associated with the low quality recommendations were rated as less trustworthy. Therefore, the source manipulation is not considered independently in this investigation. Explanations for the failed source manipulation are reviewed in the discussion section. Overall, all the manipulations with the exception of source quality were achieved.

## Test of Hypotheses & Research Questions

To test each prediction and research question, Analysis of Covariance (ANCOVA) was employed. The three covariates were life orientation (LOT), financial efficacy, and income; when the covariates elicited statistically significant main effects, those effects are reported. Means and standard deviations are also provided in table form: the emotional appeal thought listing dependent variables are located in Table 9; the recommendation-related thought listing as a function of emotional appeals are located in Table 10; the recommendation-related thought listing as a function of recommendation quality are located in Table 11; the posited interactions on thought listing dependent variables are located in Table 12; for recall as a function of emotional appeals in Table 13; for recall as a function of recommendation quality in Table 14; and, recall as a function of the posited interactions in Table 15.

**Thought Listing: Hypotheses and research questions related to processing the emotional appeal.** Hypothesis 1 predicted that hope appeal recipients would have fewer relevant thoughts and more irrelevant thoughts than fear appeal recipients. First, irrelevant thoughts as a function of the appeal type were examined. An Analysis of Covariance (ANCOVA) revealed differences between the groups,  $F(2, 550) = 3.71, p < .05, \eta^2 = .01$ . Recipients of the rational appeal generated the most irrelevant thoughts ( $M = .075, SD = .318$ ), followed by hope appeal recipients ( $M = .04, SD = .222$ ) and fear appeal recipients ( $M = .01, SD = .11$ ). The Bonferroni post-hoc test (Bonferroni was used for post hoc test because it adjusts error variance for the statistically significant covariate) revealed a statistical difference only between the rational and fear appeal recipients ( $p < .05$ ).

Next, the amount of relevant thoughts generated as a function of emotional appeal type was examined. An ANCOVA revealed a main effect for one of the covariates, Life Orientation (LOT),  $F(1, 559) = 4.149, p < .05, \eta^2 = .007$ . Fear appeal recipients ( $M = 3.01, SD = 1.47$ ) generated the most relevant thoughts about the appeal,  $F(2, 550) = 10.99, p < .001, \eta^2 = .04$ , followed by hope appeal recipients ( $M = 2.64, SD = 1.49$ ) and rational appeal recipients ( $M = 2.31, SD = 1.13$ ). The Bonferroni post-hoc test revealed that all groups were statistically different from each other ( $p < .05$ ). Hypothesis 1 was partially supported.

It was predicted, via Hypothesis 2, that hope appeal recipients would generate more supportive thoughts about the emotional appeal than would fear appeal recipients. An ANCOVA revealed a main effect for one of the covariates, Life Orientation (LOT),  $F(1, 553) = 7.571, p < .01, \eta^2 = .01$ . Hope appeal recipients ( $M = 2.28, SD = 1.53$ ) generated more supportive thoughts about the emotional appeal than rational appeal recipients ( $M = 1.76, SD = 1.25$ ); but, fear appeal recipients ( $M = 2.02, SD = 1.53$ ) did not generate fewer supportive thoughts than hope appeal recipients or rational appeal recipients,  $F(2, 586) = 5.765, p < .01, \eta^2 = .019$ . The Bonferroni post-hoc test revealed that that the hope and rational appeal group were statistically different; neither group was different from the fear appeal condition.

It was also predicted that hope appeal recipients would generate fewer counterarguments than fear appeal recipients. The ANCOVA revealed a difference in the amount of counterarguments generated as a function of emotional appeal,  $F(2, 585) = 33.65, p < .001, \eta^2 = .10$ . Fear appeal recipients ( $M = .876, SD = 1.22$ ) generated more counterarguments than hope appeal recipients ( $M = .320, SD = .793$ ) or rational appeal

recipients ( $M = .184$ ,  $SD = .475$ ); but, hope appeal and rational appeal recipients did not differ statistically in the amount of counterarguments generated. Hypothesis 2 was partially supported.

Research question 1 asked if generation of emotional thoughts would vary as a function of appeal type received. An ANCOVA revealed there were indeed significant differences in the amount of emotional thoughts generated by the conditions,  $F(2, 606) = 29.18$ ,  $p < .001$ ,  $\eta^2 = .10$ . According to the Bonferroni post-hoc tests, the fear appeal ( $M = .820$ ,  $SD = 1.05$ ) and hope appeal recipients ( $M = .624$ ,  $SD = .898$ ) generated more emotional thoughts than rational appeal recipients ( $M = .160$ ,  $SD = .440$ ;  $p < .001$ ). The emotional appeal conditions did not differ statistically in the amount of emotional thoughts generated.

Research question 2 asked about the types of emotional thoughts generated as a function of appeal type, and whether that participants thoughts would “match” the type of emotional appeal they received. An ANCOVA examining the number of hopeful thoughts generated as a function of appeal type revealed a main effect,  $F(2, 200) = 36.53$ ,  $p < .001$ ,  $\eta^2 = .27$ . Hope appeal recipients generated statistically significantly more hopeful thoughts ( $M = .97$ ,  $SD = .813$ ) than did fear appeal recipients ( $M = .20$ ,  $SD = .428$ ) and rational appeal recipients ( $M = .21$ ,  $SD = .51$ ;  $p < .001$ ). Further evidence for the match as a function of appeal type was revealed when looking at generation of fearful thoughts. An ANCOVA examining the number of fearful thoughts generated as a function of appeal type revealed a main effect for one of the covariates, financial efficacy,  $F(1, 199) = 16.81$ ,  $p < .05$ ,  $\eta^2 = .02$ . Fear appeal recipients generated more fearful thoughts ( $M = 1.16$ ,  $SD = .92$ ) than hope appeal recipients ( $M = .448$ ,  $SD = .678$ ) and

rational appeal recipients ( $M = .875$ ,  $SD = .68$ ),  $F(2, 199) = 16.81$ ,  $p < .001$ ,  $\eta^2 = .13$ .

Bonferroni post-hoc test results showed that the fear appeal generated statistically significant more fearful thoughts than the hope appeal ( $p < .05$ ).

### **Hypotheses and research questions related to recommendation processing.**

Hypothesis 3 predicted that hope appeal recipients would generate fewer supportive thoughts about the recommendations than fear appeal recipients. The emotion conditions were not expected to differ in counterarguments generated. An ANCOVA revealed a difference for the amount of supportive thoughts about the recommendations generated,  $F(2, 544) = 4.64$ ,  $p < .05$ ,  $\eta^2 = .016$ . Bonferroni's post-hoc test revealed that fear appeal recipients ( $M = 1.41$ ,  $SD = 1.20$ ) generated more supportive thoughts about the recommendations than hope appeal recipients ( $M = 1.13$ ,  $SD = 1.08$ ) and rational appeal recipients ( $M = 1.32$ ,  $SD = 1.14$ ). Fear and rational appeal recipients did not differ statistically. The second part of hypothesis three predicted that fear appeal recipients and hope appeal recipients would not differ in the amount of counterarguments generated about the recommendations. An ANCOVA revealed no statistical difference for the amount of counterarguments about the recommendation generated,  $F(2, 543) = 1.51$ ,  $p > .05$ . Fear appeal recipients ( $M = .851$ ,  $SD = 1.17$ ) did not generate significantly more counterarguments than hope appeal recipients ( $M = .893$ ,  $SD = 1.17$ ) or rationally appeal recipients ( $M = .717$ ,  $SD = 1.05$ ). Hypothesis 3 was supported.

Hypothesis 4 predicted that emotional appeal type and recommendation quality would interact to affect the generation of supportive thoughts about the recommendation. Specifically, it was posited that there would be an effect of recommendation quality on recipients of the rational appeal, such that the high quality recommendations with a high

quality source would generate the most supportive thoughts, followed by the high quality recommendations with a weak source, the low quality recommendations with a high quality source, and the low quality recommendations with a low quality source. This effect was not predicted to be mirrored by the hope and fear appeal recipients. Results of a two-way ANCOVA did not support this prediction, as the interaction between appeal type and recommendation quality was not statistically significant,  $F(6, 543) = 1.11, p > .05$ . There was a presence of a main effect for recommendation quality,  $F(3, 543) = 42.59, p < .001, \eta^2 = .18$ . Recipients of the high quality recommendations delivered by a high quality source ( $M = 1.80, SD = 1.22$ ), as well as recipients of a high quality recommendations from a low quality source ( $M = 1.67, SD = .962$ ), generated more supportive thoughts about the recommendations than recipients of the low quality recommendations with a high quality source ( $M = .755, SD = .99$ ) and recipients of the low quality recommendations with a low quality source ( $M = .836, SD = .974$ ). Hypothesis 3 was not supported.

Research question 3 asked if the number of relevant or irrelevant thoughts generated about the recommendations would vary as a function of emotional appeal type and recommendation quality. Results from a two-way ANCOVA did not support the proposed interaction for relevant thoughts, as the interaction between appeal type and recommendation quality was not significant,  $F(6, 550) = 1.291, p > .05$ . There was again a main effect for recommendation quality,  $F(3, 550) = 3.49, p < .05, \eta^2 = .02$ . Participants in the low recommendation quality, low source quality condition generated the most relevant thoughts ( $M = 2.42, SD = 1.28$ ), followed by the low quality recommendations, high source quality condition ( $M = 2.35, SD = 1.33$ ), high quality recommendations with a

high quality source ( $M= 2.05, SD= 1.16$ ), and finally the high quality recommendations with the low quality source ( $M= 2.03, SD= 1.17$ ). Overall, the low quality recommendations garnered statistically more relevant thoughts than the high quality recommendations. In terms of irrelevant thoughts, a two-way ANCOVA showed that neither that emotional appeal type or recommendation quality influenced the amount of irrelevant thoughts generated,  $F(6, 550) = 1.14, p > .05$ .

Research question 4 asked if emotional thoughts generated about the recommendations would vary as a function of emotional appeal and recommendation quality. Results from a two-way ANCOVA did not support this possible interaction on emotional thoughts, as the interaction between appeal type and recommendation quality was not significant,  $F(6, 548) = 1.037, p > .05$ . Results did reveal that financial efficacy was a significant covariate  $F(1, 548) = 2.940, p < .05, \eta^2 = .01$ . There was a main effect for appeal type of the generation of emotional thought about the recommendations,  $F(2, 597) = 3.047, p < .05, \eta^2 = .01$ . Rational appeal recipients generated the most emotional thoughts about the recommendations ( $M= .075, SD= .282$ ), followed by fear appeal recipients ( $M= .046, SD= .23$ ), and hope appeal recipients ( $M= .019, SD= .14$ ). Statistical differences were limited to the rational versus hope appeal groups. Research question 5 asked if the type of emotional thoughts generated about the recommendations would vary as a function of emotional appeal type or recommendation quality. Two-way ANCOVAs revealed that emotional appeal type and recommendation quality did not affect the number of hopeful thoughts generated by participants,  $F(3, 14) = .414, p < .05$ ; nor did it influence fearful thought generation,  $F(3, 14) = 1.01, p > .05$ . Noticeably, few participants had hopeful or fearful thoughts in response to the recommendations.

**Research questions relating to recall.** Research question 5 asked if the total number of hits, misses, or false alarms would vary as a function of emotional appeal type. Total number of hits was examined first. An ANCOVA revealed that there was a main effect for one of the covariates, financial efficacy,  $F(1, 560) = 6.447, p < .05, \eta^2 = .01$ . Hope appeal recipients had more total hits ( $M = 4.18, SD = 1.14$ ) than fear appeal recipients ( $M = 3.83, SD = 1.46$ ),  $F(2, 560) = 2.93, p < .05, \eta^2 = .01$ . Whereas hope appeal and fear appeal recipients statistically differed ( $p < .05$ ), the rational appeal recipients ( $M = 3.98, SD = 1.46$ ) did not statistically differ in their total hits from either emotional appeal condition.

Next, misses as a function of emotional appeal type were examined. An ANCOVA revealed that there was a main effect for one of the covariates, financial efficacy,  $F(1, 560) = 4.882, p < .05, \eta^2 = .006$ . Although fear appeal recipients ( $M = 1.00, SD = 1.30$ ) averaged more misses than rational appeal recipients ( $M = .862, SD = 1.17$ ), and hope appeal recipients ( $M = .778, SD = 1.12$ ), results of an ANCOVA showed the difference was not statistically significant,  $F(2, 551) = 1.47, p > .05$ .

Finally, the number of false alarms generated as a function of emotional appeal was examined. Results of an ANCOVA revealed that there was a main effect for one of the covariates, financial efficacy,  $F(1, 560) = 9.86, p < .01, \eta^2 = .02$ . There was no statistical difference in the amount of false alarms generated by hope appeal recipients ( $M = 1.17, SD = 1.85$ ), fear appeal recipients ( $M = 1.26, SD = 2.03$ ), and rational appeal recipients ( $M = 1.22, SD = 2.01$ ),  $F(2, 551) = .009, p > .05$ .

Research question 6 asked if emotional appeal type and recommendation quality would affect the total number of hits, misses, or false alarms. Hits were examined first. A

two-way ANCOVA revealed a main effect for one of the covariates, financial efficacy,  $F(1, 561) = 6.299, p < .05, \eta^2 = .01$ . The interaction between emotional appeal type and recommendation quality was not statistically significant,  $F(6, 551) = 1.57, p > .05$ .

A two-way ANCOVA for total misses as a function of emotional appeal type and recommendation quality first revealed a main effect for one of the covariates, financial efficacy,  $F(1, 551) = 5.283, p < .05, \eta^2 = .009$ . The interaction of emotional appeal type and recommendation quality on total number of misses was not statistically significant,  $F(6, 551) = 1.65, p > .05$ .

Finally, the total number of false alarms generated was examined as a function of emotional appeal and recommendation quality was examined. A two-way ANCOVA revealed a main effect for one of the covariates, financial efficacy,  $F(1, 551) = 9.764, p < .01, \eta^2 = .02$ . The interaction of emotional appeal type and recommendation quality on false alarms generated was not statistically significant,  $F(6, 551) = .955, p > .05$ .

### **Post-hoc Analysis**

Two models were created to provide a visual supplement of the hypothesized influence of emotional appeals, appraisals, felt emotion, and recommendation quality on the cognitive processing of recommendations. Because the thought listing variables were single indicator measures, path analysis was deemed the most appropriate structural equation modeling (Kline, 1998). Based on the hypotheses presented in the main study, emotional appeals were posited to elicit appraisals of goal congruence, pleasantness, uncertainty, and importance. The hope appeal was predicted to cause appraisals of high goal congruence, high pleasantness, low levels of uncertainty, and high importance. This appraisal pattern was predicted to elicit felt hope. Fear appeals were predicted to cause appraisals of goal incongruence, unpleasantness, higher levels of uncertainty, and high

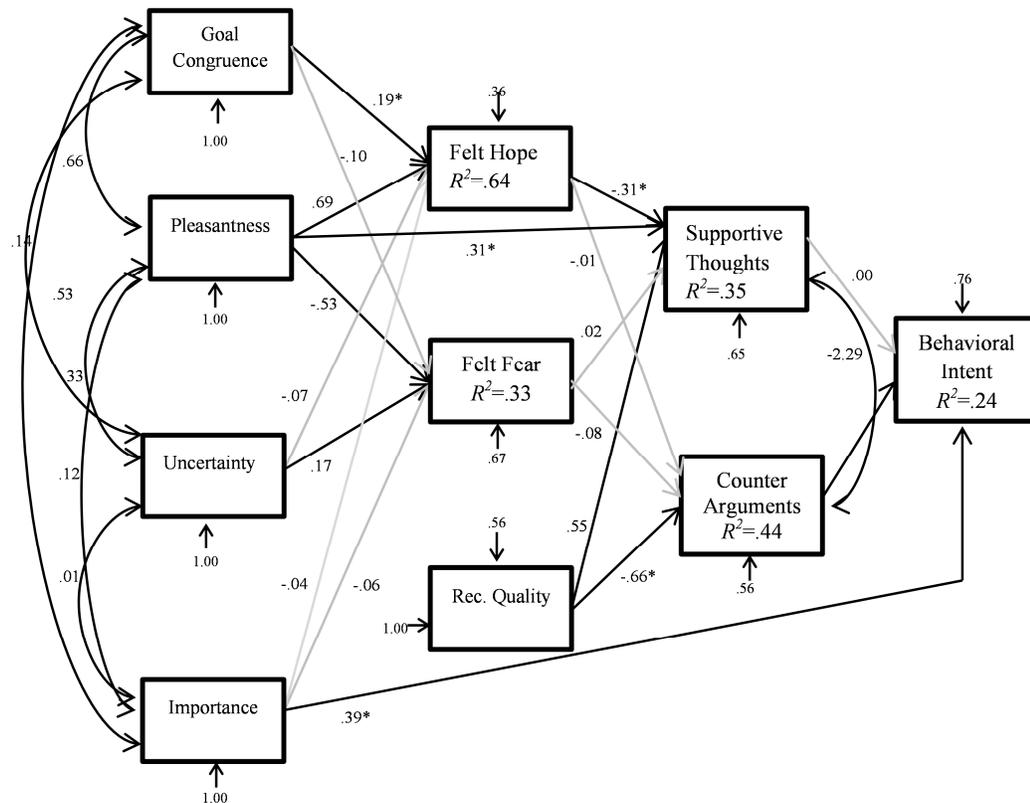
importance. This appraisal pattern was predicted to elicit felt fear. Felt fear and felt hope were expected to drive supportive thoughts and counterarguments about the recommendations. Perceived recommendation quality was included in the path model as an exogenous variable because of its important predictive role in predicting supportive thoughts and counterarguments. Finally, supportive thoughts were predicted to positively influence behavioral intentions; counterarguments were predicted to negatively influence behavioral intention. Separate models, hypothesizing the same cognitive process, were created for hope appeal recipients and fear appeal recipients.

LISREL 8.80 was used to test the path models (Jöreskog & Sörbom, 2006). Model parameters were estimated using maximum likelihood procedures. Statistical significance of each parameter estimate was determined by its *t*-statistic; this statistic is calculated by dividing the parameter estimate by its standard error. The first model run did not had acceptable fit,  $X^2(32, N= 209)= 497.17, p < .001; RMSEA= .19; SRMR= .11; CFI= .44$ . The modification indices suggested adding a path from importance to behavioral intention and goal congruence to behavioral intention. Adding a direct path between pleasantness and supportive thoughts was also suggested.

The revised model was tested for hope appeal recipients (see Figure 1) and showed satisfactory fit,  $X^2(16, N= 209)= 40.01, p < .001; RMSEA= .086; SRMR= .042; CFI= .97$  (see Table 16 for correlation matrix and standard deviations; see Table 18 for the unstandardized path coefficient values and their associated *t*-values).

Some support was provided for the model of processing of hope appeal proffered in this dissertation; that said, not all the predicted paths were significant. Results demonstrate an interesting pattern for the hope appeal recipients. Felt hope was driven by

appraisals of goal congruence and pleasantness; these appraisals predicted a reasonable amount of felt hope ( $R^2 = .64$ ). Appraisals of unpleasantness and uncertainty predicted felt fear ( $R^2 = .33$ ). Recommendation quality, felt hope, felt fear, and appraisals of pleasantness influenced supportive thought generation ( $R^2 = .36$ ). Only recommendation quality significantly influenced counterargument generation ( $R^2 = .43$ ). Instead of significantly influencing feelings of hope or fear, appraisals of importance directly influenced behavioral intentions along with counterarguments. Most of the variance for behavioral intentions remains unexplained ( $R^2 = .24$ ).



*Figure 1.* Path Analysis with standardized path coefficients with the participants who received a hope appeal. Supportive thoughts and counterarguments refer to thought listing about the recommendations. \* $p < .05$

Next, the model was tested for fear appeal recipients (see Figure 2) and showed satisfactory fit,  $\chi^2(16, N=199)=44.30, p < .001$ ;  $RMSEA=.096$ ;  $SRMR=.041$ ;  $CFI=.97$  (see Table 17 for correlation matrix and standard deviations; see Table 19 for the unstandardized path coefficients and their associated  $t$ -values). Support for this model demonstrates that fear appeal recipients go through a similar cognitive mechanisms when processing. That said, the pattern of results differed from hope appeal recipients. Appraisals of unpleasantness and importance drove feelings of fear ( $R^2=.25$ ). Appraisals of pleasantness and importance drove feelings of hope ( $R^2=.63$ ). Supportive thoughts in this model were only predicted by appraisals of pleasantness and perceptions of recommendation quality ( $R^2=.32$ ). Higher levels of perceived recommendation quality and felt hope predicted a reduced number of counterarguments. Behavioral intentions were predicted by supportive thoughts and appraisals of importance; that said, the majority of variance in behavioral intentions was not explained ( $R^2=.28$ ).

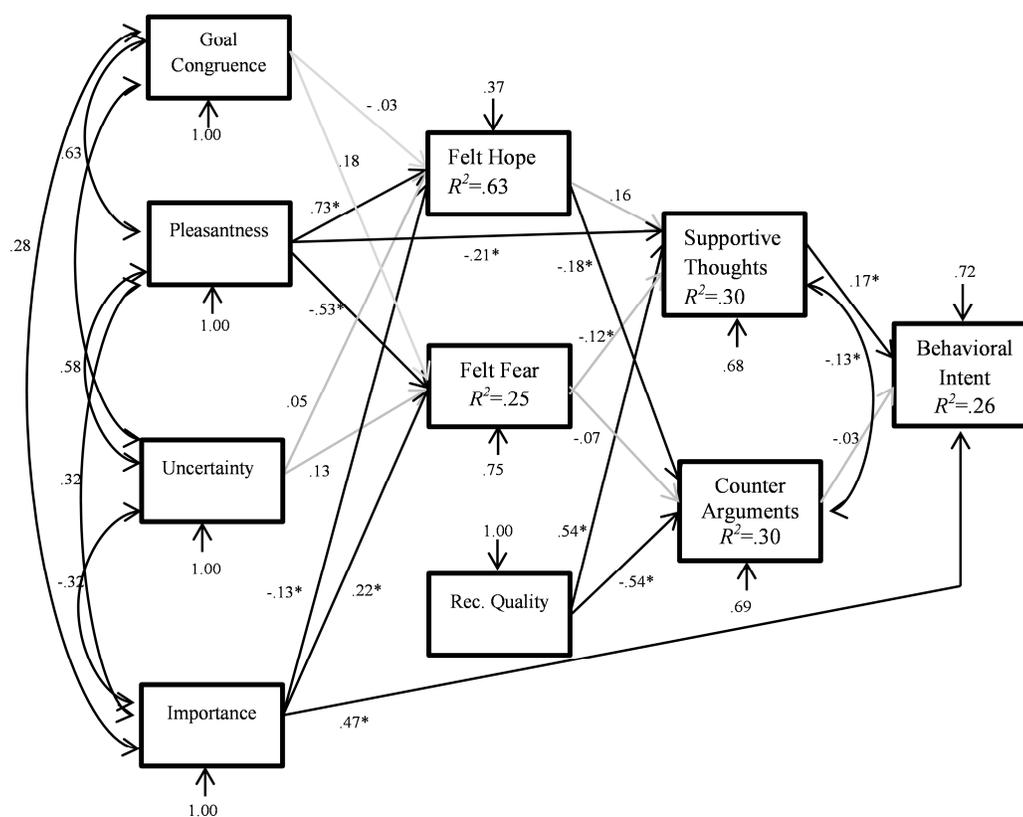


Figure 2. Path Analysis with standardized path coefficients with the participants who received a fear appeal. Supportive and counter-attitudinal thoughts refer to thought listing about the recommendations.

\* $p < .05$

## Chapter 6: Discussion

Whereas the potential of appealing to negative emotions has captured the attention of many communication scholars (Averbeck et al., 2011; Banas, Turner, & Fink, 2008; Dillard & Shen, 2005; Lindsey, 2005; Nabi, 2002; Nabi, Roskos-Ewoldson, & Carpentier, 2008; O’Keefe, 2000; Turner, 2007; Turner, 2010; Turner & Rains, 2007; Turner & Underhill, in press; Witte, 1992), positive emotions have yet to receive the same level of attention and inquiry (Chadwick, 2011; Nabi & Prestin, 2007). A reason for this may be that the dominant view in communication research is that positive emotions generally elicit heuristic processing (Nabi, 1999). But, psychologists have long separated hope from other positive emotions and recognized its discrete effects upon the psyche (Fridja, 2007; Lazarus, 1991). Appraisal theorists have delineated hope through its appraisals of uncertainty, goal congruence, pleasantness, and importance (Smith & Ellsworth, 1985). Unlike other positive emotions, hope has been theorized to influence motivation, attitudes, and behaviors in meaningful, long-term ways (MacInnis & de Mello, 2005). Marketing scholars have argued that hope’s power comes from its ability to bias cognition toward goal achievement. That said, none of these propositions were empirically tested before the current study.

Based on the literature reviewed, a conceptual framework on how hope appeals could influence message processing was proffered. First, it was hypothesized that hope appeal recipients would not scrutinize the emotional appeal or counterargue its goal-congruent content. Conversely, fear appeal recipients were expected to have fewer supportive thoughts and potentially more counterarguments about the goal-incongruent content of the fear appeal. The cognitive processing of recommendations to address the

threat outlined in the appeal was expected to differ from the processing of the emotional appeal. It was hypothesized that due to the felt emotion and the importance of the topic, individuals would downgrade the importance of accuracy motivation subconsciously, and engage in biased processing. Hope appeal recipients theoretically would not have the motivation to scrutinize the recommendations and would therefore not discern between low and high quality arguments. Fear appeal recipients, seeking reassurance, would also not scrutinize the recommendations. The propositions for hope appeal recipients are in line with the literature on message processing as a function of positive and negative mood, which provided a theoretical foundation through which to understand the potential effects of hope appeals. If hope behaved like other positive emotions (specifically happiness), the hope appeal should lead to decreased motivation to process recommendations in an effort to maintain positive mood (Wegener & Petty, 1994).

When deriving any theory of emotional appeal processing, it is necessary to also consider the effect of recommendation quality. The influence of argument strength on processing is documented in the dual-processing paradigm (Chaiken, 1980; Petty & Cacioppo, 1986). To distinguish the effects of the emotional appeal and recommendation quality manipulations, the emotional appeals and recommendations were separated in this investigation (Das et al., 2003; de Hoog et al., 2005; 2008). The results for processing of the recommendations were expected to be the opposite of those found for appeal processing. Specifically, individuals encountering a fear appeal were hypothesized to be highly motivated to process the recommendations in a systematic, biased manner (Das et al., 2003; de Hoog et al., 2005; 2008), such that they would not counterargue a goal-congruent message (in this case, any recommendations). Fear appeal recipients would be

more willing to accept recommendations that accompany the message because of the increased efficacy the advice would give them to overcome the potential threat. This willingness to accept recommendations also means that they would be less likely to scrutinize the veracity of recommendations or the source that provided them. It was posited that fear appeal recipients, because of their desire for goal-congruent information, would generate more supportive thoughts about the recommendations, regardless of recommendation quality. The interaction of emotional appeal type and recommendation quality was predicted to influence thoughts about the recommendations. Specifically, it was posited that the rational appeal recipients would best differentiate between high and low quality recommendations.

In addition to thought listing, recall of recommendations was also examined. Research questions about recall as a function of the emotional appeal received and recommendation quality were put forth; specifically, it was asked whether emotional appeal type alone, or interacting with recommendation quality, would influence the accuracy of recall.

### **Summary of the results**

The first series of hypotheses and research questions examined how recipients of the varied emotional appeals processed those messages. Hypothesis 1 posited that hope appeal recipients would generate fewer relevant thoughts and more irrelevant thoughts about the emotional appeal than fear appeal recipients. Results demonstrated that rational appeal recipients generated the most irrelevant thoughts, followed by hope, and then fear appeal recipients. The only statistical difference emerged between the rational and fear conditions. The second half of Hypothesis 1 posited that hope appeal recipients would

generate fewer relevant thoughts than fear appeal recipients. Indeed, fear appeal recipients did generate the most relevant thoughts, followed by hope appeal recipients, and the rational appeal condition. Hypothesis 1 was partially supported.

Hypothesis 2 posited that hope appeal recipients would have more supportive thoughts about the emotional appeal and fewer counterarguments than fear appeal recipients. Results demonstrated that hope appeal recipients did generate more supportive thoughts than the fear appeal or rational appeal conditions. No significant differences emerged between the groups with regards to counterarguing. Hypothesis 2 also was partially supported.

Research questions 1 and 2 asked if emotional thoughts would vary as a function of emotional appeal, and if thoughts would “match” the type of emotional appeal received. Results showed that hope appeal recipients generated more hopeful thoughts than fear appeal or rational appeal recipients. Similarly, fear appeal recipients generated more fearful thoughts than hope or rational appeal recipients.

Next, the potential effect of the emotional appeal induction on processing of recommendations was examined. Hypothesis 3 posited that hope appeal recipients would generate fewer supportive thoughts about the recommendations than fear appeal recipients. Results confirmed that the fear appeal recipients did list more supportive thoughts, regardless of recommendation quality. As hypothesized, the emotional appeal conditions did not elicit different amounts of counterarguments generated about the recommendations. Hypothesis 3 was supported.

Hypothesis 4 posited that the interaction between emotional appeal type and recommendation quality would affect the generation of supportive thoughts about the

recommendations. It was posited that rational appeal recipients who received high quality recommendations would generate more supportive thoughts than participants who received low quality recommendations. Emotional appeal recipients were not expected to differentiate between low and high quality recommendations. Results did not support this hypothesis—there was a strong main effect for recommendation quality, such that all recipients of high quality recommendations, regardless of appeal condition, generated more supportive thoughts than recipients of low quality recommendations.

Research question 3 asked if the number of relevant or irrelevant thoughts about the recommendations would vary as a function of emotional appeal type and recommendation quality. Results revealed that recommendation quality did influence relevant versus irrelevant thought generation, such that low quality recommendation recipients had more relevant thoughts than high quality message recipients. There was no difference between recommendation quality conditions on the number of irrelevant thoughts generated. Emotional appeal conditions did not influence relevant or irrelevant thought generation about the recommendations.

Research questions 4 and 5 asked if the amount of emotional thoughts and type of emotional thoughts would vary as a function of emotional appeal type and recommendation quality. Surprisingly, results revealed that rational appeal recipients had the most emotional thoughts about the recommendations, followed by fear appeal recipients and then hope appeal recipients, with statistical difference emerging between the rational and hope groups. The types of emotional thoughts generated did not vary between emotional appeal conditions or recommendation quality inductions.

The next series of hypotheses and research questions examined recall of the recommendations and source. A memory recognition task was completed at the end of the study. Research question 6 asked if the total number of hits, misses, or false alarms would vary as a function of emotional appeal type. Results revealed that hope appeal recipients had more accurate recall (hits) than the fear appeal recipients. The conditions did not differ significantly in the amount of misses or false alarms. Next, recall as a function of recommendation quality was examined; results showed no significant differences in recall for high or low quality recommendations. The interaction between emotional appeal type and recommendation quality did not exert significant influence on recall.

Two path models were created to provide a visual presentation of the hypothesized influence of emotional appeals, appraisals, felt emotion, and recommendation quality on the cognitive processing of recommendations and behavioral intention. Based on the hypotheses presented in the main study, emotional appeals were posited to elicit appraisals of goal congruence, pleasantness, uncertainty, and importance. The hope appeal was predicted to cause appraisals of high goal congruence, high pleasantness, low levels of uncertainty, and high importance. This appraisal pattern was predicted to elicit felt hope. Fear appeals were predicted to cause appraisals of goal incongruence, unpleasantness, higher levels of uncertainty, and high importance. This appraisal pattern was predicted to elicit felt fear. Felt fear and felt hope were expected to drive supportive thoughts and counterarguments about the recommendations. Perceived recommendation strength was included in the path model as an exogenous variable because of its important role in predicting supportive thoughts and counterarguments.

Finally, supportive thoughts were predicted to positively influence behavioral intentions; counterarguments were predicted to negatively influence behavioral intentions. Separate models, hypothesizing the same cognitive process, were created for hope appeal recipients and fear appeal recipients.

The first model run, based solely on theoretical predictions, did not have acceptable fit. Paths from pleasantness to supportive thoughts, importance to behavioral intentions, and goal congruence to behavioral intentions were added. The revised model was first tested for hope appeal recipients and showed satisfactory fit. Some support was provided for the model of processing of hope appeals proffered in this dissertation; that said, not all the predicted paths were significant. That is, this set of data did not fully support the theoretical model put forth in this dissertation. Results demonstrate an interesting pattern for the hope appeal recipients. Felt hope was driven by appraisals of goal congruence, pleasantness, and uncertainty. Appraisals of unpleasantness and uncertainty predicted felt fear. Recommendation quality, felt hope, felt fear, and appraisals of pleasantness influenced supportive thought generation. Only recommendation quality significantly influenced counterargument generation. Goal congruence, importance, and counterarguments were the main drivers of behavioral intentions. Whereas the model was a good fit for this data, it did not do very well in predicting behavioral intentions.

The revised model was a good fit for fear appeal recipients as well. Appraisals of unpleasantness and importance predicted some of the variance in felt fear. Feelings of hope were predicted by appraisals of pleasantness and importance. Perceived recommendation quality played a central role in predicting supportive thoughts and

counterarguments. Supportive thoughts and appraisals of importance predicted behavioral intention; again, the majority of variance in behavioral intentions was not accounted for in this model.

These post-hoc models were provided for descriptive purposes. The data was not collected in a format amenable to modeling; future researchers desiring to create causal models of hope and fear appeal processing should collect multiple indicators for each variable and conduct multi-sample SEM to allow for direct comparison (Kline, 1998). That said, the models provide a visual interpretation of the results presented through hypothesis testing. It was interesting that the additional paths between the appraisals and outcome measures were needed to fit the model to this data set. Theory would dictate that felt emotion mediates the relationship between appraisals and outcomes; this data set shows only partial mediation. There are at least two explanations why this result was obtained. First, it may be that emotion does not fully mediate the relationship between appraisal and outcome. Or, it could be that this data set was abnormal; path models reflect the data that are provided and are not sensitive to theoretical concerns.

### **Implications**

This dissertation centers on examining how hope appeals are processed in persuasive contexts. Results supported the argument that hope appeal recipients would have little reason to argue the appeal or question its veracity. They generated many more supportive thoughts than counterarguments about its contents. It was hypothesized that hope appeals may cause biased or shallow processing of recommendations, as hopeful people would want to maintain their positive state. The results of this study provide no support for this conjecture. In this dissertation, hope appeals did not lead to peripheral

processing of the recommendations. Although hope shares the appraisals of pleasantness and goal congruence with other positive emotions, it did not behave like a prototypical positive emotion in terms of processing. In fact, results clearly demonstrate that hope cannot be conflated with more traditional types of positive affect studied in the mood and messaging paradigm. Hope seemed to focus participants. They generated few irrelevant thoughts about the emotional appeal, and were sensitive to recommendation quality manipulations. Moreover, hope appeal recipients had the most accurate recall. Instead of distracting or decreasing accuracy motivation, hope seemingly facilitated processing. These results reinforce the call by Griskevicius et al. (2010) to examine discrete positive emotions without the assumption that they are all peripherally processed.

Results of this study demonstrate that participants in all experimental conditions closely processed the appeal and recommendations. This effect is demonstrated through the small number of irrelevant thoughts, the discernment between low and high quality recommendations in all conditions, and overall highly accurate recognition. There are a few potential explanations for the difference in the predictions and the results for this study. First, it could be that the demand characteristics elicited from an online study focused readers in. The highly unrealistic nature of the study could have caused participants to pay closer attention to the messages than they would in a natural setting. It could be that the high level of importance about the topic focused participants, such that emotional appeal type did not exert a significant influence on its own. If high importance were driving processing, then the body of literature reviewed in this dissertation would suggest that highly relevant topics could cause systematic processing, such that study participants would distinguish between low and high quality arguments. Or it could be

that the messages were not complex enough to cause processing differences across conditions.

The findings of the current study lend support for an alternative model of message processing, the Unimodel (Kruglanski & Thompson, 1999). The Unimodel posits that motivation, capacity, and complexity of information drive information processing. The lack of message complexity could play the most important role in explaining the findings in this study. It could be that the messages were not complex enough to tax the reader or require much effort. The pro-attitudinal nature of the messaging may have also facilitated processing. Most of the extant research on the effects of mood on persuasive message processing employed counter-attitudinal messages in their studies (Mackie & Worth, 1989; Smith & Shaffer, 1991). The ways in which counter-attitudinal appeals could elicit hope is outside the purview of this dissertation, but worthy of consideration in future research.

The lack of attention to the source in this study can also be explained via Unimodel scholarship. Kruglanski and Thompson (1999) documented a biasing effect, wherein presentation order biases interpretation of subsequent information. In this study, the source was consistently presented after the recommendations. The lack of differences between the high and low quality sources on perceived source expertise can be attributed to the quality of the recommendations presented. That is, sources that were presented after the high quality recommendations were rated as having higher levels of perceived source competence and trustworthiness than the source listed after low quality recommendations.

While not in line with the predictions, the strong effect of recommendation quality on thought listing is congruent with persuasion literature. When a topic is more involving, participants are expected to distinguish between weak and strong arguments (Chaiken, 1980; Petty & Cacioppo, 1986). It was posited that emotion could potentially bias cognitive processing. That did not happen in terms of the processing measures used in this study. Participants, regardless of emotional condition, distinguished between high and low quality recommendations. The findings of this investigation are also consistent with Kruglanski's Unimodel, which posits that arguments that are relevant are processed more closely.

### **Limitations**

The first limitation of this study is the use of a single topic, which limits the generalizability of the findings (Jackson, 1992). It is conceivable that effects could differ with the use of a different topic. The topic was chosen because it elicited all the necessary appraisals associated with hope and fear, especially personal importance. Other studies of hope appeals using more global topics, such as climate change and influenza, were not able to elicit significant levels of hope (Chadwick, 2011). Overall, the use of a single topic impedes the ability to generalize the study results.

Ecological validity is also a limitation of this study. Experiments allow for more control, but lack realism. The experiment was conducted online, so that participants could be in a more naturalistic setting. That said, the demand characteristics of an experimental study create different conditions than the real world situations in which people receive messages. Additionally, the use of a convenience sample also limits the generalizability. Although participants were in the target demographic for these messages, and the

messages were tailored and pilot tested on similar students, different results could be attained with a random sample. Moreover, the samples in this study come from a more affluent background. A minority of the participants reported family incomes below \$100,000 in the previous year; results for this study may vary widely if students with more financial pressures were participants.

The lack of differences in the recall condition are likely due to limitations in measurement, but fall in line with the findings of Liberman and Chaiken's (1992) investigation of biased processing. The high importance of the topic did not motivate participants to engage in defensive inattention, and so participants in all conditions were highly accurate in their recall. That said, more time should have elapsed between the messages and memory recognition task.

### **Future Research**

Hope and other types of emotional appeals are often deemed appropriate for use by communication practitioners who craft marketing, health, political, and pro-social campaigns. Whereas a variety of discrete emotional appeals have persuasive potential (Nabi, 1999; Witte, 1992; Turner, 2007; Turner & Underhill, in press), a dearth of scholarship exists on the efficacy of these appeals. Practitioners use emotional appeals without theoretical guidance or appreciation for their potential maladaptive consequences. Future research should seek to further develop message design theory. This investigation was a small first step toward developing theory on how hope appeals are processed. Future research should not only replicate, but attempt to extend these findings.

Future research on emotional appeals should also include efficacy as a predictor variable. Efficacy was used as a covariate in this study. This was perhaps imprudent, considering the important role that efficacy plays in other emotion-based models (AAM, Turner, 2007; EPPM, Witte, 1992). These models posit that felt emotion interacts with efficacy to influence risk perceptions, attitudes, and behavioral intentions. The same could be true for hope appeals.

### **Advice for Practitioners**

Although not the central focus, this dissertation provides some guidance on how to design messages for young adults about their personal finances. There is a serious disconnect between perceptions of those entering college and reality for those graduating. A survey of 16-18 year olds found that teens on average believed they would obtain a starting salary of \$73,000 upon college graduation and earn on average \$150,000 per year once they established themselves (Charles Schwab, 2011). In reality, some 50 percent of recent college graduates are unemployed or underemployed (White, 2012). Student loan debt in the United States has now surpassed \$1 trillion, and the average graduate owes \$25,000; more people are in default on student loans than consumer debt (Raum, 2012). Student loan delinquency can have many serious consequences: reduced credit scores, negative impacts on ability to borrow money in the future, collections, and wage garnishments (Cunningham & Kienzl, 2011). Moreover, student debt is not isolated to loans. At least 91% of undergraduates have a credit card, with the average number of cards per student at 4.6 (Sallie Mae, 2009). A 2008 survey showed that the average college graduate is over \$4,000 in credit card debt; 25% of students have paid a late fee and 15% have paid a fine for going over a card's limit (Mierzwinski, Lindstrom, &

Bourassa, 2008). These types of debts can be devastating to those attempting to establish financial independence after graduation. A lack of awareness and knowledge about the negative consequences of credit cards and loans are arguably to blame for the poor financial decision making among many college students (Mierzwinski, Lindstrom, & Bourassa, 2008).

Efforts to engage college students in financial literacy are gaining popularity (Charles Schwab, 2011); that said, most universities have not implemented any type of financial education classes into the core curriculum. The cost and effort to enroll in financial education courses often makes them unappealing to people of all ages. Communication practitioners are therefore uniquely poised to help address this issue by crafting messages to persuade young people to engage their financial health and wellbeing.

Emotional appeals should be considered as a message design strategy for those working in financial literacy. That said, research has shown that fear appeals directed at college-aged participants often cause reactance and maladaptive outcomes (Dillard & Shen, 2005; Rains & Turner, 2007). The results of this study demonstrate that students were open to the use of both fear and hope appeals on the topic of personal financial security. Participants read the messages and associated recommendations closely and elaborated their thoughts on the topic. The hope appeals were superior in eliciting supportive thought and accurate recall; therefore, more research and consideration of the potential efficacy of using hope appeals in financial literacy promotion and other pro-social venues is strongly encouraged.

Table 2

*Pilot 1: Summary of EFA for Perceived Financial Efficacy using Principal Axis Factoring**(N =99)*

Item	Factor Loadings		
	Establish	Budget	Accuracy
Purchase an automobile after graduation	<b>.775</b>	.180	.183
Choose the best type of retirement plan	<b>.761</b>	.285	.216
Secure automobile insurance	<b>.758</b>	.310	.078
Begin saving for retirement	<b>.677</b>	.209	.113
Not rely on financial support from family	<b>.665</b>	.139	.146
Pay student loan bills	<b>.652</b>	.223	.147
Secure health insurance	<b>.586</b>	.371	.275
Save enough money for an emergency fund that would cover all bills for 3 months	.557	<b>.496</b>	.026
Secure renter's insurance	<b>.547</b>	.382	.382
Earn money from investments	<b>.532</b>	-.105	.396
Secure needed loans	<b>.525</b>	.349	.401
Not need to borrow money	<b>.519</b>	.290	-.089
Invest money into stocks or bonds	<b>.515</b>	-.004	.373
Stick to a personal budget	.165	<b>.771</b>	.077
Create a realistic personal budget	.169	<b>.743</b>	.123
Pay bills in a timely manner	.229	<b>.644</b>	.261
Manage a credit card	.357	<b>.620</b>	.160
Check the accuracy of a bank statement	.098	.459	<b>.446</b>
Balance your checkbook	.019	.461	<b>.780</b>
Accurately file personal income tax documents	.404	.111	<b>.496</b>
Eigenvalues	8.363	1.661	.955
% of variance	41.82	8.31	4.77

Table 3

*Pilot study of emotional appeals: Means and standard deviations for dependent variables*

	<i>n</i>	Felt Hope	Felt Fear	Goal Congruence	Importance	Pleasantness	Certainty	Persuasion
Hope Appeal	53	4.40 (1.34)	3.57 (1.19)	4.56 (.86)	6.14 (1.24)	4.50 (.91)	4.68 (1.01)	4.79 (.90)
Fear Appeal	50	2.87 (1.20)	4.59 (1.17)	3.03 (1.26)	6.39 (.78)	2.71 (1.08)	3.10 (1.31)	4.92 (.77)
Rational Appeal	50	3.60 (1.06)	3.60 (1.12)	3.69 (1.05)	6.22 (.97)	4.00 (.91)	4.09 (1.07)	4.78 (.81)

Table 4

*Pilot Study 3: Recommendations, means, and standard deviations for perceived recommendation quality*

	<i>M</i>	<i>SD</i>
1. Transportation and housing can take a lot of your monthly income, which means you may not be able to afford other needs like food and a cell phone. Make wise choices and choose a living situation and transportation that give you a financial cushion.	5.25	1.04
*2. Track your spending for the last three months using your bank statement and receipts. This will give you an idea of where your "extra" money is going and how much you could have saved if you hadn't made some unnecessary purchases or wasted cash.	5.71	.91
*3. Pay attention to bank fees. Review your statements each month for unnecessary charges. Oftentimes, using your debit card as a credit card (and not entering your pin) will help you avoid extra charges and penalties. Make sure you are familiar with your account's policies.	5.49	1.06
*4. Pack a lunch or bring a drink and snacks to class. Pieces of fruit, granola bars, and reusable water bottles provide healthy alternatives. You can save a lot of money by just planning ahead and not buying snacks, meals, or drinks on campus.	5.80	.93
*5. Open a credit card with a low interest rate that will build up your credit score; but, only use credit cards if you can afford to pay off charges within a month. An open credit card account will help you build credit over time.	5.50	.99
6. Avoid eating out at expensive restaurants with your friends. When you have a kitchen, invite them over to your place and have a potluck. Spending time with your friends should be about socializing and having fun, not spending money and going into debt unnecessarily.	5.25	1.12
^7. Make sure you are only in relationships with people who have a similar commitment to financial stability. Do not date someone who wastes money. Stay single and have fun with friends. Distance yourself from people who want you to spend money or use credit.	3.72	1.27

Table 4 (continued)

	<i>M</i>	<i>SD</i>
<i>Recommendations, means, and standard deviations for perceived recommendation quality</i>		
^8. Start investing most of your money in your retirement fund now. You should open a Roth IRA to maximize your savings for retirement. Earnest saving will pay dividends in future decades. You should not assume you will receive social security benefits or a pension.	4.54	1.22
9. Invest at least \$500 per month in a mutual fund to have a post-graduation nest. It is taking months, even years, for some new graduates to secure employment. Even if you move back home with your parents, you will have necessary expenses to cover.	4.75	1.09
^10. Instead of focusing on school, work as much as you can during the semester and save all the money you earn for post graduation when you cannot find a job. Unemployed people can easily get into financial trouble. Save money now to avoid pain later.	3.11	1.28
^11. Destroy your credit cards. Debit cards should be used judiciously for ATM withdrawals. All of your financials should be handled with a cash budget. Use a jar for each major expense and put a set amount of cash in the jar each week.	3.52	1.35

\*four strongest    ^ four weakest

Table 5

*Pilot Study 3: Sources, means, and standard deviations for perceived source expertise*

	<i>M</i>	<i>SD</i>
*1. Taylor Martin, Personal financial advisor at an investment firm.	5.66	1.09
2. Riley Jones, President of a nonprofit financial literacy organization.	5.07	1.11
3. Quinn Robinson, Author of a personal finance book for recent college graduates.	5.40	1.06
4. Cameron Smith, Freshman at UMD and writer for "The Diamondback."	3.08	1.18
^5. Rory Jackson, Sophomore Communication major.	3.03	1.19
6. Parker Williams, Teller at a local bank.	4.37	1.07

\*highest rated source

^ lowest rated source

Table 6

*Main Study- Correlations of the items in the Perceived Financial Efficacy Scale*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Create Budget	1.00																			
2. Stick to Budget	.618	1.00																		
3. Pay Bills	.543	.504	1.00																	
4. Secure Loans	.398	.324	.425	1.00																
5. Not Borrow	.248	.252	.323	.275	1.00															
6. No Family Support	.233	.258	.327	.449	.564	1.00														
7. Emergency Fund	.359	.337	.389	.436	.463	.506	1.00													
8. Health Insurance	.345	.318	.443	.620	.355	.492	.443	1.00												
9. Renters Insurance	.316	.321	.429	.611	.367	.510	.546	.641	1.00											
10. Auto Insurance	.356	.327	.443	.623	.322	.450	.448	.675	.659	1.00										
11. Retirement	.273	.295	.339	.424	.401	.519	.493	.487	.574	.496	1.00									
12. Balance Checkbook	.464	.420	.509	.456	.215	.257	.313	.397	.410	.461	.289	1.00								
13. Bank Statement	.513	.449	.549	.376	.241	.244	.270	.360	.357	.387	.235	.590	1.00							
14. Credit Card	.554	.467	.521	.445	.263	.300	.333	.365	.417	.420	.345	.477	.488	1.00						
15. Taxes	.298	.256	.302	.422	.262	.433	.388	.431	.500	.478	.415	.424	.385	.324	1.00					
16. Retirement	.293	.287	.299	.522	.380	.527	.507	.557	.613	.527	.672	.375	.296	.357	.514	1.00				
17. Investments	.270	.215	.270	.422	.374	.453	.451	.450	.452	.473	.575	.299	.255	.340	.408	.567	1.00			
18. Earn from Investments	.269	.257	.344	.482	.394	.487	.473	.479	.566	.511	.562	.371	.288	.331	.418	.608	.722	1.00		
19. Purchase Auto	.227	.233	.306	.458	.387	.524	.476	.539	.555	.607	.512	.275	.194	.319	.419	.491	.451	.466	1.00	
20. Pay student loans	.309	.297	.408	.534	.349	.528	.442	.503	.491	.511	.405	.377	.359	.383	.396	.434	.351	.387	.467	1.00
SD	1.19	1.25	1.17	1.47	1.75	1.83	1.65	1.57	1.57	1.56	1.76	1.38	1.36	1.24	1.78	1.75	1.71	1.68	1.78	1.58

Table 7

*Main Experiment: Means and standard deviations for emotional appeal manipulation checks*

	<i>n</i>	Felt Hope	Felt Fear	Goal Congruence	Importance	Pleasantness	Certainty	Persuasion
Hope Appeal	214	4.40 (1.34)	3.57 (1.19)	4.57 (.86)	6.14 (1.24)	4.21 (1.25)	4.69 (1.00)	4.79 (.90)
Fear Appeal	199	2.86 (1.20)	4.59 (1.17)	3.03 (1.26)	6.39 (.78)	2.33 (1.07)	3.10 (1.31)	4.92 (.77)
Rational Appeal	202	3.60 (1.06)	3.77 (1.12)	3.69 (1.05)	6.22 (.97)	3.35 (.97)	4.09 (1.07)	4.77 (.81)

Table 8

*Main Experiment: Manipulation checks for the recommendations and source quality manipulations*

	<i>n</i>	Perceived Recommendation Quality	Perceived Source Competence	Perceived Source Trustworthiness
Low Quality Recommendations Low Quality Source	143	3.80 (1.65)	3.81 (1.39)	4.57 (1.09)
Low Quality Recommendations High Quality Source	153	3.75 (1.58)	3.99 (1.42)	4.00 (1.08)
High Quality Recommendations Low Quality Source	157	5.72 (.974)	5.15 (.91)	5.01 (.77)
High Quality Recommendations High Quality Source	152	5.70 (1.06)	5.46 (.99)	5.22 (.83)

Table 9

*Means and standard deviations for thoughts generated about the emotional appeals*

	<i>n</i>	Irrelevant Thoughts	Relevant Thoughts	Supportive Thoughts	Counter Attitudinal Thoughts	Emotional Thoughts	Hopeful Thoughts	Fearful Thoughts
Hope Appeal	214	.04 (.222)	2.64 (1.49)	2.28 (1.53)	.32 (.793)	.624 (.898)	.97 (.813)	.448 (.678)
Fear Appeal	199	.01 (.11)	3.01 (1.47)	2.02 (1.53)	.876 (1.22)	.820 (1.05)	.20 (.428)	1.16 (.92)
Rational Appeal	202	.075 (.318)	2.31 (1.13)	1.76 (1.25)	.184 (.475)	.16 (.44)	.208 (.509)	.875 (.68)

Table 10

*Means and standard deviations for thoughts generated about the recommendations, as a function of emotional appeal received*

	<i>n</i>	Irrelevant Thoughts	Relevant Thoughts	Supportive Thoughts	Counter Attitudinal Thoughts	Emotional Thoughts	Hopeful Thoughts	Fearful Thoughts
Hope Appeal	214	.009 (.10)	2.13 (1.24)	1.13 (1.08)	.893 (1.17)	.02 (.14)	.333 (.49)	.17 (.58)
Fear Appeal	199	.03 (.16)	2.27 (1.34)	1.41 (1.20)	.851 (1.17)	.05 (.23)	.42 (.51)	.42 (.51)
Rational Appeal	202	.005 (.07)	2.17 (1.09)	1.32 (1.14)	.717 (1.05)	.28 (.02)	.83 (.41)	.00 (.00)

Table 11

*Means and standard deviations for thoughts generated about the recommendations, as a function of recommendation quality*

	<i>n</i>	Irrelevant Thoughts	Relevant Thoughts	Supportive Thoughts	Counter Attitudinal Thoughts	Emotional Thoughts	Hopeful Thoughts	Fearful Thoughts
Low Quality Recommendations Low Quality Source	142	.00 (.00)	2.42 (1.28)	.823 (.962)	1.42 (1.22)	.063 (.297)	.333 (.516)	.333 (.707)
Low Quality Recommendations High Quality Source	156	.006 (.08)	2.35 (1.33)	.774 (1.02)	1.42 (1.27)	.045 (.208)	.200 (.448)	.600 (.548)
High Quality Recommendations Low Quality Source	159	.03 (.18)	2.35 (1.33)	1.68 (.972)	.30 (.626)	.025 (.158)	.500 (.527)	.100 (.316)
High Quality Recommendations High Quality Source	154	.01 (.11)	2.05 (1.16)	1.80 (1.21)	.184 (.57)	.05 (.223)	.667 (.500)	.000 (.00)

Table 12

*Means and standard deviations for thoughts generated about the recommendations, as a function of the interaction between emotional appeal and recommendation quality*

		<i>n</i>	Irrelevant Thoughts	Relevant Thoughts	Supportive Thoughts	Counter Arguments	Emotional Thoughts	Hopeful Thoughts	Fearful Thoughts
Hope Appeal	Low Recs Low Source	41	.000 (.000)	2.29 (1.31)	.659 (.693)	1.44 (1.25)	.024 (.156)	.000 (.000)	.000 (.000)
	Low Recs High Source	55	.000 (.000)	2.51 (1.43)	.764 (1.05)	1.65 (1.34)	.036 (.189)	.000 (.000)	.000 (.000)
	High Recs Low Source	51	.04 (.196)	1.73 (1.06)	1.41 (.998)	.286 (.540)	.000 (.000)	.400 (.548)	.000 (.000)
	High Recs High Source	51	.000 (.000)	2.02 (1.14)	1.65 (1.16)	.216 (.541)	.000 (.000)	.500 (.707)	1.00 (1.41)
Fear Appeal	Low Recs Low Source	42	.000 (.000)	2.60 (1.33)	.929 (.947)	1.52 (1.15)	.095 (.370)	.932 (.565)	.000 (.000)
	Low Recs High Source	40	.019 (.137)	2.20 (1.40)	.65 (.834)	1.33 (1.35)	.000 (.000)	.200 (.447)	.600 (.548)
	High Recs Low Source	52	.000 (.000)	2.23 (1.35)	1.82 (.983)	.420 (.835)	.000 (.000)	.500 (.577)	.250 (.500)
	High Recs High Source	45	.000 (.000)	2.27 (1.36)	2.09 (1.36)	.256 (.790)	.09 (.288)	.500 (.707)	.500 (.707)
Rational Appeal	Low Recs Low Source	39	.000 (.000)	2.36 (1.22)	.923 (1.22)	1.31 (1.30)	.082 (.277)	.500 (.707)	.000 (.000)
	Low Recs High Source	53	.007 (.08)	2.30 (1.17)	.827 (1.04)	1.31 (1.11)	.094 (.295)	.000 (.000)	.000 (.000)
	High Recs Low Source	47	.033 (.18)	2.15 (1.00)	1.79 (.858)	.213 (.463)	.064 (.247)	.000 (.000)	.000 (.000)
	High Recs High Source	49	.014 (.117)	1.88 (.95)	1.71 (1.12)	.102 (.306)	.077 (.354)	.000 (.000)	.000 (.000)

Table 13

*Means and standard deviations for total recall, as a function of emotional appeal received*

		Total Hits	Total Misses	Total False Alarms
	<i>n</i>			
Hope Appeal	214	4.18 (1.14)	.778 (1.12)	1.17 (1.85)
Fear Appeal	199	3.83 (1.46)	1.00 (1.30)	1.26 (2.03)
Rational Appeal	202	3.98 (1.46)	.862 (1.17)	1.22 (2.01)

Table 14

*Means and standard deviations for total recall, as a function of recommendation quality*

		Total Hits	Total Misses	Total False Alarms
	<i>n</i>			
Low Quality Recommendations Low Quality Source	142	3.89 (1.36)	1.04 (1.28)	1.39 (2.11)
Low Quality Recommendations High Quality Source	156	3.99 (1.45)	.833 (1.24)	1.15 (1.89)
High Quality Recommendations Low Quality Source	159	3.90 (1.25)	.943 (1.14)	1.36 (1.96)
High Quality Recommendations High Quality Source	154	4.21 (1.14)	.733 (1.13)	.961 (1.77)

Table 15

*Means and standard deviations for total recall, as a function of the interaction between emotional appeal received and recommendation quality*

		<i>n</i>	Total Hits	Total Misses	Total False Alarms
Hope Appeal	Low Recs Low Source	41	4.17 (1.24)	.805 (1.21)	1.51 (2.28)
	Low Recs High Source	55	4.15 (1.25)	.709 (1.12)	1.05 (2.01)
	High Recs Low Source	51	4.18 (.888)	.745 (.891)	1.18 (1.62)
	High Recs High Source	51	4.22 (1.17)	.863 (1.28)	1.00 (1.48)
	Low Recs Low Source	43	3.95 (1.36)	1.00 (1.25)	.907 (1.63)
Fear Appeal	Low Recs High Source	40	3.65 (1.82)	1.10 (1.55)	1.35 (1.79)
	High Recs Low Source	52	3.58 (1.36)	1.17 (1.23)	1.65 (2.18)
	High Recs High Source	45	4.18 (1.27)	.711 (1.16)	1.07 (2.36)
	Low Recs Low Source	39	3.46 (1.52)	1.38 (1.41)	1.67 (2.41)
Rational Appeal	Low Recs High Source	53	4.06 (1.36)	.755 (1.11)	1.11 (1.92)
	High Recs Low Source	47	3.98 (1.36)	.851 (1.18)	1.32 (2.18)
	High Recs High Source	49	4.33 (.875)	.571 (.866)	.878 (1.53)

Table 16

*Post-hoc path model: Correlation matrix and standard deviations for hope appeal recipients*

	1	2	3	4	5	6	7	8	9	10
1. Goal Congruence	1.00									
2. Pleasantness	.658**	1.00								
3. Uncertainty	.534**	.327**	1.00							
4. Importance	.135*	.119	.013	1.00						
5. Felt Hope	.605**	.789**	.263*	.068	1.00					
6. Felt Fear	-.364**	-.551**	-.055	-.132	-.416**	1.00				
7. Recommendation Strength	.137*	.159*	.183**	.082	.185**	-.093	1.00			
8. Supportive Thoughts	.081	.148*	.112	-.016	.035	-.082	.543**	1.00		
9. Counter-Attitudinal Thoughts	.064	-.008	-.021	.043	-.098	-.011	-.657**	-.433**	1.00	
10. Behavioral Intention	.289**	.059	.044	.426**	.069	-.140*	.030	-.042	.165*	1.00
SD	1.07	1.20	1.03	1.06	1.40	1.35	1.68	1.07	1.17	1.06

\* $p < .05$     \*\* $p < .01$

Table 17

*Post-hoc path model: Correlation matrix and standard deviations for fear appeal recipients*

	1	2	3	4	5	6	7	8	9	10
1. Goal Congruence	1.00									
2. Pleasantness	.623**	1.00								
3. Uncertainty	.717**	.583**	1.00							
4. Importance	-.278**	-.316**	-.307**	1.00						
5. Felt Hope	.497**	.782**	.496**	-.365**	1.00					
6. Felt Fear	-.116	-.409**	-.118	.299**	-.464**	1.00				
7. Recommendation Strength	.042	-.041	.096	.08	-.01	.093	1.00			
8. Supportive Thoughts	-.098	-.083	-.066	.054	.016	-.042	.538*	1.00		
9. Counter-Attitudinal Thoughts	-.143*	-.155*	-.252**	.128	-.144**	-.035	-.539**	-.402**	1.00	
10. Behavioral Intention	-.231**	-.245**	-.238**	.501**	-.130	.147*	.153*	.192**	.029	1.00
SD	1.16	1.02	1.24	1.05	1.18	1.35	1.65	1.19	1.18	1.09

\* $p < .05$     \*\* $p < .01$

Table 18

*Unstandardized Loadings and associated t-values for hope appeal path model*

<b>Path</b>	<b>Unstandardized Loadings (SE)</b>	<b>t-values</b>
Goal Congruence→Felt Hope	.25(.082)	3.04
Pleasantness→Felt Hope	.81(.065)	12.33
Uncertainty→Felt Hope	-.087(.068)	-1.28
Importance→Felt Hope	-.051(.056)	-.91
Goal Congruence→Felt Fear	-.12(.11)	-1.09
Pleasantness→Felt Fear	-.60(.086)	-6.98
Uncertainty→Felt Fear	.23(.089)	2.52
Importance→Felt Fear	-.073(.074)	-.99
Felt Hope→Supportive Thoughts	-.25(.071)	-3.53
Felt Fear→Supportive Thoughts	.017(.054)	.31
Pleasantness→ Supportive Thoughts	.28(.09)	3.12
Recommendation Quality →Supportive Thoughts	.35(.037)	9.49
Felt Hope→Counterarguments	-.0057(.049)	-.11
Felt Fear→Counterarguments	-.065(.051)	-1.29
Recommendation Quality→Counterarguments	-.46(.037)	-12.49
Supportive Thoughts→ Behavioral Intention	.0045(.067)	.068
Counterarguments→Behavioral Intention	.12(.062)	1.99
Goal Congruence→Behavioral Intention	.23(.061)	6.36
Importance→Behavioral Intention	.39(.083)	10.07

Table 19

*Unstandardized Loadings and associated t-values for fear appeal path model*

<b>Path</b>	<b>Unstandardized Loadings (SE)</b>	<b>t-values</b>
Goal Congruence→Felt Hope	-.033(.069)	-.48
Pleasantness→Felt Hope	.84(.068)	12.45
Uncertainty→Felt Hope	.052(.062)	.83
Importance→Felt Hope	-.14(.053)	-2.70
Goal Congruence→Felt Fear	.21(.11)	1.91
Pleasantness→Felt Fear	-.70(.11)	-6.29
Uncertainty→Felt Fear	.14(.10)	1.34
Importance→Felt Fear	.29(.086)	3.33
Felt Hope→Supportive Thoughts	.16(.095)	1.67
Felt Fear→Supportive Thoughts	-.11(.058)	-1.83
Pleasantness→Supportive Thoughts	-.06(.07)	-2.13
Recommendation Quality →Supportive Thoughts	.39(.043)	9.06
Felt Hope→Counterarguments	-.18(.063)	-2.87
Felt Fear→Counterarguments	-.061(.055)	-1.10
Recommendation Quality→Counterarguments	-.38(.043)	-8.96
Supportive Thoughts→ Behavioral Intention	.16(.061)	2.52
Counterarguments→Behavioral Intention	.024(.062)	.38
Goal Congruence→Behavioral Intention	-.076(.06)	-1.27
Importance→Behavioral Intention	.48(.06)	7.35

## Appendix A

### Hope Appeal

Today's college graduates have more debt than their predecessors; the average college graduate has more than \$23,000 of debt. But, recent graduates should feel confident about finding work to pay off these loans after graduation. You probably know some people that have had trouble finding jobs; but with perseverance, most graduates are eventually finding good jobs and reaping the reward of their discipline.

You should have a lot of hope for your future and faith in the American millennial generation to succeed. As a college student, you may look at the national economic situation and worry about your future. While most students wait until after graduation to get serious about their personal finances, it can be very beneficial to develop your knowledge about smart money habits now, putting you on the right path for the future.

Financial analysts forecast that the economy will improve in coming years. There should be jobs and opportunities available. The market has already made significant recovery. But you cannot be dependent solely upon the whims of our global economy and the unknown of the future. You should empower yourself with the knowledge and skills to succeed.

The future challenges you face are real and should be taken seriously. They will not be met easily or in a short span of time. But, feel confident that you can and will meet these challenges. There are plenty of reasons to believe that obstacles can be overcome and that you can make smart financial decisions. The hope for your generation's prosperity and happiness is still alive, especially within you. You will next be provided recommendations from a financial expert about how to navigate your financial future.

### Fear Appeal

Today's college graduates have more debt than their predecessors; the average college graduate has more than \$23,000 of debt. Students should be worried about finding work to pay off these loans after graduation. Some 37 percent of 18- to 29-year-olds are unemployed or out of the workforce entirely. Even with perseverance, most graduates are not finding good jobs; and many are still not being rewarded for their discipline.

You should have heavy anxiety about your future, and little faith in the American millennial generation to succeed overall. As a college student, the national economic situation should make you worry about your future. Most students wait until after graduation to get serious about their personal finances. You should not wait—developing your knowledge about smart money habits now can put you on the right path for the future.

Financial analysts forecast that the economy will not improve in coming years. The stock market has made almost no recovery. As if this isn't bad enough, there will not be enough jobs or opportunities available for graduates. You cannot be dependent solely upon the whims of our global economy and the unknown of the future. You must equip yourself with the knowledge and skills to succeed.

The future challenges you face are real; they are serious and many. They will not be met easily or in a short span of time. But, not meeting these challenges could be devastating. There are few reasons to believe that obstacles can be overcome and that you can always make smart financial decisions. The fear for your generation's poverty and despair is overwhelming. You will next be provided recommendations about how to navigate your financial future.

### **Rational Appeal**

Personal finance is a really important topic. A solid credit history and excellent FICO credit score are extremely valuable. A credit score in the United States represents the worthiness of a person to get a loan, and the likelihood that person will pay debts. A credit score makes up a large portion of the credit report that lenders use to judge an applicant's credit risk and whether to extend a loan. A high credit score can save you thousands in mortgage interest, lower your auto insurance premiums, and affect your career. For all their importance, however, a lot of confusion surrounds credit reports and scores.

There are three major credit bureaus, not just one: Equifax, TransUnion and Experian each track information about how consumers use credit. Based on that information, each credit bureau also maintains FICO credit scores for each consumer in its database. As a result, you have three credit reports and multiple credit scores. And because each credit bureau typically has slightly different information about your credit history, the FICO credit score generated from each of the credit bureaus also tends to vary, sometimes significantly.

Credit reports and scores are different: While your FICO credit score is generated based on information in your credit report, it's important to understand the difference between the two. Your credit report shows your history of using credit, including the accounts you have (both opened and closed), your payment history, credit limits, and amounts owed. Your FICO credit score is generated based on this information, and generally ranges from a low of 300 to a high of 850. You will next be provided recommendations about how to navigate your financial future.

## Appendix B

### Measures for Main Dissertation Study

2. We are first wondering about the general way you think about the world.

Response Options for Each Question:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
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I hardly ever expect things to go my way.

I like to have the responsibility of handling a situation that requires a lot of thinking.

I'm always optimistic about my future.

I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.

I would prefer complex to simple problems.

I always look on the bright side of things.

Thinking is not my idea of fun.

In uncertain times, I usually expect the best.

If something can go wrong for me, it will.

Things never work out the way I want them to.

3. Exposure to Appeal

4. We are interested in what you were thinking when you read this message. Even if you were not really thinking about the message—let us know. Please list the thoughts, any thoughts, you had while reading the message. Separate different thoughts with commas.

5. It is common for messages to cause distinct feelings in people; this may or may not be true for you. What did the message make you feel? How much of each of the following emotions are you currently experiencing due to the message?

Response Options for Each Question:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
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The message made me feel positive.

The content of this message was alarming.

The message made me feel hopeful.

The contents of the message scared me.

Reading this message made me feel enthusiastic.

The message made me feel irate.

Reading the message made me feel encouraged.

The message made me feel frightened.

The message made me feel despair.

Reading this message made me feel optimistic.

The content of the message made me feel anxious.

The message made me feel fearful.

Reading this message made me feel negative.

6. Please provide your reaction to the message you read.

Opinions about the Message

Response Options for Each Question:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
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The message was troubling.

The message was enjoyable.

The message made me feel good about the future.

The message contained positive information.

The message was negatively toned.

The message was pleasant to read.

The message was unacceptable.

The message was wrong.

The message was negative.

The message was intelligent.

The message was smart.

The message was bad.

7. A few more questions about the message you just read.

Response Options for Each Question:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
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The message was consistent with your personal goals.

The message communicated that it is more possible than not that you can avoid accumulating debt after graduation.

The message made financial success after graduation seem more possible.

The message communicated that it is more possible than not that you can get a job within 6 months graduation.

The message contained information that you are likely to achieve your post-graduation goals.

The message communicated that it is more possible than not that you will be able to establish financial security after graduation.

The message communicated that it is more possible than not that you can create financial security after graduation without assistance.

The message made achieving financial goals after graduation seem more likely.

The message was compatible with your ideas.

8. How important is financial security to YOU?

Response Options for Each Question:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
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Managing Finances

Financial Security is irrelevant to me.

Financial Security is important to me.

Financial Security has no bearing on me.

Financial Security is of no concern to me.

9. You will now be given some recommendations to guide you toward financial security.

14. We are interested in what you were thinking when you read the recommendations. Even if you were not really thinking about the recommendations—let us know. Please list the thoughts, any thoughts you had while reading the recommendations:

15. Perceptions of the Recommendations

Response Options for Each Question:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
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The recommendations were good.

The recommendations were illogical.

The recommendations were useful.

The recommendations were weak.

The recommendations were effective.

16. Please indicate your perceptions about the source of the recommendations.

Response Options for Each Question:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
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Perceptions of Source

Intelligent

Unsympathetic

Selfish

Inexpert

Trustworthy

Informed

Moral

Virtuous

Competent

Dishonest

Stupid

Trained

17. We are wondering about your plans for attaining financial security. Please respond below.

Response Options for Each Question:

Absolutely Will Not	Probably Will Not	Doubtful I Will	Not Sure	Possibly Will	Probably Will	Absolutely Will
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#### Financial Behaviors

I will do what I can to prepare for financial independence after graduation.

I will make a plan to achieve financial independence after graduation.

I plan to be more proactive to attain financial independence after graduation.

I intend to take steps to plan for financial independence after graduation.

18. We are wondering if you have any interest in learning more about financial literacy.

Response Options for Each Question:

YES	NO	MAYBE
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Would you be interested in attending a workshop focused on teaching financial literacy to college students?

Would you be interested in signing up for a webinar on financial literacy for college students?

Would you be interested in enrolling in a free, semester-long workshop on financial literacy for college students?

Would you be interested in enrolling in a 1 credit course on financial literacy for college students?

19. We are wondering how you perceive your ability to complete the following tasks after graduation from college.

Absolutely Cannot	Probably Cannot	Doubtful I Can	Not Sure	Possibly Can	Probably Can	Absolutely Can
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#### Financial Activities

Begin saving for retirement

Stick to a personal budget

- Pay bills in a timely manner
- Secure needed loans
- Invest money into stocks or bonds
- Not rely on financial support from family
- Manage a credit card
- Secure health insurance
- Check the accuracy of a bank statement
- Secure auto insurance
- Create a realistic personal budget
- Accurately file personal income tax documents
- Pay student loan bills
- Save enough money for an emergency fund that would cover all bills for 3 months
- Balance your checkbook
- Choose the best type of retirement plan
- Not need to borrow money
- Earn money from investments
- Purchase an automobile if needed
- Secure renter's insurance

20. We would like to know how you think about managing finances generally.

Orientation toward Financial Issues

Response Options for Each Question:

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
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When I encounter information about managing finances, I focus on only a few key points.

It is important for me to interpret information about managing finances in a way that applies directly to my life.

After I encounter information about managing finances, I am likely to stop and think about it.

When I see or hear information about managing finances, I rarely spend much time thinking about it.

If I need to figure out how to manage my finances, the more viewpoints I get the better.

When I encounter information about managing finances, I read or listen to most of it, even though I may not agree with its perspective.

There is far more information on managing finances than I personally need.

After thinking about managing my finances, I have a broader understanding.

If I have to act on managing my finances, the advice of one expert is good enough for me.

21. Please indicate the statements that were provided as recommendations to you earlier in the study.

Which Recommendations Did You Read?

Pack a lunch or bring a drink and snacks to class. Pieces of fruit, granola bars, and reusable water bottles provide healthy alternatives. You can save a lot of money by just planning ahead and not buying snacks, meals, or drinks on campus.

Invest at least \$500 per month in a mutual fund to have a post-graduation nest. It is taking months, even years, for some new graduates to secure employment. Even if you move back home with your parents, you will have necessary expenses to cover.

Pay attention to bank fees. Review your statements each month for unnecessary charges. Oftentimes, using your debit card as a credit card (and not entering your pin) will help you avoid extra charges and penalties. Make sure you are familiar with your account's policies.

Instead of focusing on school, work as much as you can during the semester and save all the money you earn for post graduation when you cannot find a job. Unemployed people can easily get into financial trouble. Save money now to avoid pain later.

Transportation and housing can take a lot of your monthly income, which means you may not be able to afford other needs like food and a cell phone. Make wise choices and choose a living situation and transportation that give you a financial cushion.

Open a credit card with a low interest rate that will build up your credit score; but, only use credit cards if you can afford to pay off charges within a month. An open credit card account will help you build credit over time.

Destroy your credit cards. Debit cards should be used judiciously for ATM withdrawals. All of your financials should be handled with a cash budget. Use a jar for each major expense and put a set amount of cash in the jar each week.

Make sure you are only in relationships with people who have a similar commitment to financial stability. Do not date someone who wastes money. Stay single and have fun with friends. Distance yourself from people who want you to spend money or use credit.

Drinking at home can save a lot of money. When going out with friends, partake at home first or not at all. Order water at restaurants and bars. Have friends over for celebrations. Ask everyone to bring their own food and drinks.

Track your spending for the last three months using your bank statement and receipts. This will give you an idea of where your "extra" money is going and how much you could have saved if you hadn't made some unnecessary purchases or wasted cash.

Avoid eating out at expensive restaurants with your friends. When you have a kitchen, invite them over to your place and have a potluck. Spending time with your friends should be about socializing and having fun, not spending money and going into debt unnecessarily.

Start investing most of your money in your retirement fund now. You should open a Roth IRA to maximize your savings for retirement. Earnest saving will pay dividends in future decades. You should not assume you will receive social security benefits or a pension.

22. Which source provided the recommendations you read?

Rory Jackson, Sophomore Communication major

Taylor Martin, Personal financial advisor at an investment firm

Riley Jones, President of a nonprofit financial literacy organization

Cameron Smith, Freshman at UMD and writer for "The Diamondback"

T.J. Watson, Author of a personal finance book

Parker Williams, Teller at a local bank

Other (please specify)

Demographics

23. My age is \_\_\_\_\_ years.

24. I identify as:

Male

Female

Other

25. Please indicate your Race. Check all that apply.

Caucasian

African American

Asian American

Latino/Latina

Native American

Pacific Islander

Middle Eastern

Other (please specify)

26. Please indicate your year in college.

Freshman

Sophomore

Junior

Senior

Other (please specify)

27. Which of the following best represents your political philosophy?

Liberal

Moderate

Conservative

Radical

None

Other (please specify)

28. Please think about the total income for all members of your household in 2011. Please mark the range in which your family income falls. If you are uncertain, please give your best guess.

Less than \$20,000

\$20,000- \$39,999

\$40,000- \$59,999

\$60,000- \$79,999

\$80,000- \$99,999

\$100,000- \$119,999

\$120,000- \$139,999

\$140,000- \$159,999

\$160,000- \$179,999

\$180,000- \$199,999

\$200,000- \$249,999

over \$250,000

Other (please specify)

29. Please enter your SONA ID to receive credit for your study participation. Your SONA ID is a five digit code number that can be found in your SONA account. Participants who enter incorrect information will likely not receive credit.

#### DEBRIEFING

Hello, my name is Jill Underhill. I am a graduate student in the Department of Communication at The University of Maryland. Under the supervision of Dr. Dale Hample, this study is part of my dissertation investigating how people respond to financial topics. You were asked to participate in the study because you are in a communication undergraduate class. You are one of approximately 650 people in the study.

This study aims to discover how people's emotion, specifically hope and fear, are related to attitude change and behavioral intentions in financial contexts. Hope and fear are normal emotions and I am available to discuss any further thoughts or concerns elicited from answering the questionnaire. Please feel free to contact me at [jmc12@umd.edu](mailto:jmc12@umd.edu). Please note the message and recommendations you viewed today were created for use in this study. Thank you again for participating. We appreciate your time. Please refrain from telling other students about the purpose of this study.

30. Enter your email address below if you would like to be entered into the raffle for a \$200 Amazon.com gift card. Your email address will be separated from your responses. Email addresses will not be used for any other purpose. Study credit is not dependent upon raffle entry.

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