



Uplifting Fear Appeals: Considering the Role of Hope in Fear-Based Persuasive Messages

Robin L. Nabi^a and Jessica Gall Myrick^b

^aDepartment of Communication, University of California; ^bDepartment of Film-Video and Media Studies, Donald P. Bellisario College of Communications, Pennsylvania State University

ABSTRACT

Fear appeal research has focused, understandably, on fear as the primary emotion motivating attitude and behavior change. However, while the threat component of fear appeals associates with fear responses, a fear appeals' efficacy component likely associates with a different emotional experience: hope. Drawing from appraisal theories of emotion in particular, this article theorizes about the role of hope in fear appeals, testing hypotheses with two existing data sets collected within the context of sun safety messages. In both studies, significant interactions between hope and self-efficacy emerged to predict behavioral intentions. Notable main effects for hope also emerged, though with less consistency. Further, these effects persisted despite controlling for the four cognitions typically considered central to fear appeal effectiveness. These results, consistent across two samples, support the claim that feelings of hope in response to fear appeals contribute to their persuasive success. Implications for developing a recursive model of fear appeal processing are discussed.

More than 60 years of research on the persuasive effects of fear appeals has resulted in several theoretical models of influence, none of which has been fully endorsed as explaining the conditions under which fear generates persuasion (e.g., Mongeau, 2013; Witte & Allen, 2000). Rather, the four cognitions of perceived severity, perceived susceptibility, perceived response efficacy, and perceived self-efficacy have been identified as important for generating desired attitude and behavior change. In short, perceived susceptibility to a severe threat theoretically generates fear (Lazarus, 1991; Witte, 1992), while efficacy perceptions are expected to channel that fear into adaptive action.

However, deeper reflection upon this process raises an interesting question. If severity and susceptibility perceptions associate with the emotion of fear, what emotion might efficacy perceptions generate? That is, perhaps the role of efficacy information is not simply to reduce fear by generating efficacy beliefs but also to generate a different, yet similarly productive emotion to motivate desired action, specifically, hope. It is clear from past research that fear appeals often generate multiple affective outcomes in audiences, which influence persuasive success (e.g., Dillard, Plotnick, Godbold, Freimuth, & Edgar, 1996), and recent work has demonstrated that a dynamic experience of fear, with fear peaking after threat information is presented and then falling, is associated with fear appeal effectiveness (Dillard, Li, Meczowski, Yang, & Shen, 2017). This begs the question of whether another emotional state facilitates persuasive outcomes after fear ebbs. Nabi (2015) argued that

the shift from threat to efficacy information within fear appeals likely results in a corresponding shift in audience members' emotional experiences from fear to hope. Thus, effective fear appeals may be those that generate fear as the dominant emotion in response to convincing threat components, followed by hope as the dominant emotion in response to convincing efficacy components. However, the role of hope in fear appeal effects has yet to be explored empirically. If hope contributes to fear appeal persuasiveness, this finding would have important implications not only for improved theoretical understanding of the process underlying fear-based message effects but also for the design of messages that typically use fear to promote health behavior change. That is, perhaps fear appeals may be more effective if they are designed to also evoke hope.

In this research, we examine two existing data sets in which fear and hope were both assessed in response to fear-based messages promoting sun safety behaviors. The purpose of these analyses was to determine, first, whether hope arousal associates with fear arousal and persuasive outcomes in a fear appeal context, and second, if hope arousal, presumably triggered by efficacy information, moderates the influence of self-efficacy perceptions to affect message outcomes. We begin with a review of the fear appeal literature, the role of cognitive appraisals in emotional experiences, and a discussion of hope and its relationships to different types of efficacy perceptions before examining the data speaking to these interrelationships.

Fear appeal research: A brief history and critique

The fear appeal literature has cycled through several theoretical perspectives over the past 60 years (see Myrick & Nabi, 2017, for a more detailed discussion). The drive model was the first to emerge, conceptualizing fear as a drive-like state, motivating people to adopt recommendations expected to alleviate the unpleasant affect (Hovland, Janis, & Kelly, 1953). Next came the parallel processing model (PPM; Leventhal, 1970), which separated the motivational from the cognitive aspects of fear appeal processing, suggesting that those who respond to fear appeals by focusing on the threat (cognition) would engage in adaptive responses whereas those responding with fear (emotion) would engage in maladaptive responses. The PPM was quickly followed by the protection motivation theory (PMT; Rogers, 1975, 1983), which ultimately focused on four categories of thought generated in response to fear appeals—judgments of threat severity, threat susceptibility, and response and self-efficacy— and how they combine to predict message acceptance. Finally, the extended parallel process model (EPPM; Witte, 1992) integrated the PPM and PMT, predicting that if perceived efficacy outweighs perceived threat, danger control and adaptive change will ensue. If, however, perceived threat outweighs perceived efficacy, fear control and maladaptive behaviors should be expected.

Although meta-analyses of fear appeal research essentially suggest that the cognitions identified in the PMT, and later the EPPM, are important to fear appeal effectiveness, no model of fear appeals has been fully endorsed as accurately capturing the process of fear's effects on decision making and action (see Mongeau, 1998, 2013; Popova, 2012; Witte & Allen, 2000). Regardless, evidence does support a positive linear relationship between the audience experience of fear and attitude, behavioral intention, and behavior change, and further, that fear appeals are more persuasive when efficacy components are included (Tannenbaum et al., 2015). Thus, to the extent message features in a fear appeal evoke perceptions of threat susceptibility and threat severity, fear may be aroused and in turn influence persuasive outcomes in light of audiences' response efficacy and self-efficacy perceptions. Although threat susceptibility and severity have been clearly identified as the underlying cognitive components of fear (Lazarus, 1991; Rogers, 1975; Witte, 1992), the literature has been mute on the emotional linkages to response and self-efficacy. In light of the silence around this issue, it seems the default assumption is that efficacy information is designed to capitalize on fear arousal, translating it into effective action. Although this approach acknowledges the role of emotional response to the threat information in a fear appeal, it fails to consider whether people have unique emotional reactions to the efficacy information that follows. In other words, if people feel fear in response to threatening information, what emotion might be evoked in response to efficacy information?

Appraisal theories of emotion (e.g., Lazarus, 1991) are quite helpful in answering this question. Such theories assume that the patterns of thoughts, or appraisals, that people have about their environments as related to their goals underlie emotional experiences, and that individual discrete emotions

have unique appraisal patterns along various dimensions. Lazarus (1991) for example argues for six dimensions—three that relate to goals and three that relate to situational coping. The goal appraisals include goal relevance (how closely the situation touches upon a personal goal), goal congruence (how the situation helps or hinders progress toward a goal), and ego-involvement (the type of goal at stake and its relation to one's ego). The coping appraisals include credit or blame (assignment of responsibility for the situation), coping potential (perception of whether and how one can manage the situation), and future expectations (perception of whether or not the situation will become more goal congruent). For example, if one sees a situation as goal relevant yet goal incongruent, has no strong ego-involvement, does not ascribe blame to anyone, has uncertainty about their ability to cope with the situation, and is uncertain about what to expect in the future, one is expected to experience fear. Appraisal processes are rapid and ongoing. Thus, as information in the environment, including the mediated environment, changes, then appraisal patterns and the associated emotional experiences should change as well.

The appraisal perspective was influential in the EPPM's development, with Witte (1992) arguing that information that relates to a severe threat to which one is susceptible maps onto the underlying appraisals of fear—goal relevance, goal incongruence, and especially uncertainty about coping ability and future outcomes. Interestingly, Witte did not extend the application of the appraisal perspective to the efficacy component of fear appeals. Rather, the EPPM seems to assume that those induced to feel fear and who have positive perceptions of the response and self-efficacy message information would pursue adaptive action whereas fearful individuals with more negative perceptions of the efficacy information would pursue maladaptive action.

However, as Nabi (2015) argued, just as appraisals of threatening information can generate fear, appraisals of efficacy information should alter the experienced emotional state. The situation may still be perceived as goal relevant and goal incongruent. However, if one perceives the efficacy information presented as credible, one's thoughts about one's ability to cope should shift from uncertainty to greater confidence. As we consider what emotion has this appraisal pattern, the most likely candidate is hope (Lazarus, 1991).

A new consideration for fear appeals: Hope

As an emotion, hope, like all emotional states, can be conceptualized as a psychological construct consisting of "(1) cognitive appraisal or evaluation of a situation; (2) the physiological component of arousal; (3) a subjective feeling state; (4) a motivational component, including behavior intentions or action readiness; and (5) motor expression" (Nabi, 2010). However, there is some debate in the emotion literature on the more precise nature of hope. Some emotion theorists (e.g., Averill, 1994; Lazarus, 1991, 1999) emphasize hope's state-based, emotional qualities. For example, Lazarus (1991) defines hope as the feeling of "...wishing and yearning for relief from a negative situation, or for the realization of a

positive outcome when the odds do not greatly favor it” (p. 282). However, others, Snyder (2000) in particular, conceptualize hope as more trait-based and cognitive, defining it as “a cognitive set that is based on a reciprocally-derived sense of successful agency (goal-directed determination) and pathways (planning to meet goals)” (Snyder et al., 1991, p. 571). Despite their disagreements largely centered around issues of barriers (Lazarus sees them as essential whereas Snyder does not) and situational control (Snyder sees perceptions of efficaciousness as central of hope whereas Lazarus sees hope as possible and especially useful even when one does not perceive situational control), they are united in their view of hope as a source of motivation, orienting people toward future goals (Lazarus, 1991, 1999; Snyder, 2000). As such, hope is believed to be associated with the desire for and impetus for goal-directed action, especially in the face of adversity (Averill, 1994; Averill, Catlin, & Chon, 1990; Lazarus, 1991; Stotland, 1969).

Hope, efficacy, and fear appeals

Given its association with perseverance, hope is especially intriguing as a message-generated emotion. Yet, the role of hope in motivating behavior change via mediated messages has only recently begun to be explored (e.g., Chadwick, 2015; Prestin, 2013), and hope arousal has yet to be considered within the fear appeal context. Nabi (2015) recently addressed this issue in her discussion of the concept of emotional flow, arguing that as information unfolds across a persuasive message, audiences, who naturally and automatically engage in a process of appraisal and reappraisal of environmental stimuli, experience different emotions. Given that shifts in emotions over the course of message exposure are linked to message content, Nabi suggests that messages in which threatening information is followed by efficacy information may be well thought of as “fear-hope” appeals because convincing efficacy information may generate hope given its association with behavioral confidence and situational control. That is, when people are told what they can do and that they can do it, they may not only believe they can do it (i.e., they have high perceptions of self-efficacy), but they may also feel motivated to do so (i.e., they are hopeful). Thus, hope may be an important, yet overlooked, component of successful fear appeals.

This assertion is supported by a more careful consideration of the underlying appraisal components of fear and hope. As Lazarus (1991) notes, both fear and hope are marked by goal relevance and goal incongruence. For both emotions, ego-involvement is not essential nor is the appraisal of blame (or credit). He further argues that future expectations must remain uncertain to sustain both fear and hope. The one appraisal on which these two emotions differ is coping potential. For fear, coping potential is uncertain, and though Lazarus does not commit to the role of coping potential for hope, suggesting it is not essential for the experience of hope, Snyder (2002) is more direct. Specifically, he suggests that high-hope individuals often regulate their thoughts and actions to make stressful situations less stressful. Such cognitive and behavioral management suggests positive coping potential, which corresponds with feelings of hope.

The question, then, is whether and how efficacy information promotes coping potential and, in turn, hope. Self-efficacy refers to a person’s self-confidence in performing a desired behavior (Bandura, 1997). If one believes they can perform a behavior, it stands to reason that their perception of their ability to cope with the situation would increase. Response efficacy reflects a person’s belief that a recommended action can help avoid the threat. If one believes a productive behavior exists, coping perceptions could be elevated. However, if one does not believe they can actually enact that behavior (i.e., self-efficacy for performing the efficacious response is low), coping perceptions would be undermined, and sadness or even depression, rather than hope, would likely result. Thus, though perception of response efficacy may be linked to hope, self-efficacy perception is arguably more proximal to experiences of hope.

Indeed, cross-sectional surveys examining personality traits and situations that foster perseverance have found positive and significant correlations between hope and self-efficacy (Magaletta & Oliver, 1999; O’Sullivan, 2011). Further, suggestions about a possible relationship between hope and self-efficacy perceptions have been made previously within persuasion contexts (e.g., Chadwick, 2015; MacInnis & De Mello, 2005). However, these studies did not explore this potential relationship in depth nor empirically test them.

To this point, we have argued that while fear is evoked in response to threatening information, hope is likely evoked in response to convincing efficacy information (self-efficacy information, in particular). Clearly self-efficacy information should generate self-efficacy perceptions as well. A critical question from a theoretical perspective, then, is how exactly these constructs interrelate to influence persuasive outcome. One possibility is that hope mediates the influence of self-efficacy. That is, perceptions of efficacy evoke hope, and hope motivates action. Although hope may have some direct influence on behavior given hope’s association with perseverance, we believe its mediating role is unlikely. Self-efficacy beliefs are understood to be relatively enduring, based on a complex of information about the self and past experiences with strong links to specific behavioral outcomes (Bandura, 1997). Hope, however, unlike other emotions, does not have a clear action tendency (Lazarus, 1991). As Lazarus articulates, hope likely associates with approach tendencies and perhaps a desire to not give up, but its target is often diffuse (e.g., staying alive, being healthy). It is, instead, the more specific thoughts about agency and pathways (Snyder, 2000), that are akin to efficacy beliefs, that predict specific actions. As such, feelings of hope likely need the more concrete context provided by self-efficacy beliefs to be effectively put to use. Thus, hope is an unlikely mediator of self-efficacy.

Alternatively, there is good reason to believe hope could enhance the influence of self-efficacy on behavioral outcomes. First, building from the argument above, we suggest self-efficacy and hope enjoy a recursive relationship. As discussed earlier, the cognitions associated with self-efficacy (i.e., confidence in one’s ability to perform an action) associate with the cognitive appraisals that generate hope. Relatedly, feelings of hope serve as a motivator to act, thus increasing the likelihood that self-efficacy will translate into actual behavior. In

essence, perceptions of efficacy may encourage feelings of hope, and feelings of hope may reinforce and enhance perceptions of efficacy, which combine to enhance behavioral enactment.

Second, hope may serve an information function, encouraging people to act on their efficacy beliefs. There are multiple theoretical perspectives that support the idea that emotions serve as cues to behavior, including the affect heuristic (Slovic, Finucane, Peters, & MacGregor, 2007), feelings as information (Loewenstein, Weber, Hsee, & Welch, 2001), somatic markers (Damasio, 1994), and affect as information (Schwarz & Clore, 2003). In each model, the idea is similar—current affective states quickly and often subconsciously influence decision-making by signaling whether a choice is desirable or not. Of particular interest, Schwarz and Clore note that affect or feelings related to oneself can also serve as “embodied information” (p. 301) that impacts self-relevant cognitions (e.g., self-esteem, self-efficacy). Thus, the affect-as-information perspective in particular supports the view that feelings of hope can boost self-efficacy and serve as a cue that the recommended behavioral goal is one worth pursuing.

Hypotheses

If it is the case that boosts to self-efficacy perceptions created by fear appeals boost hope and vice versa, we should find a positive correlation between those two variables after message exposure. Further, given there is the possibility that perceptions of response efficacy may also have some benefit to the experience of hope, we predict:

H1: Hope will positively correlate with both self-efficacy and response efficacy perceptions within the context of fear appeal messages.

The relationship between fear and hope within the fear appeal context is also important to consider, though it may be less straightforward. It is tempting to assume that as a positively-experienced affective state, hope would negatively correlate with fear. However, as noted earlier, the appraisal patterns of both fear and hope include, in addition to goal relevance and incongruence, uncertainty about future prospects (Lazarus, 1991). In fact, Lazarus (1999), who described hope as a coping resource, noted the conceptual proximity of hope and fear: “the future uncertainty that underlies hope means that anxiety about our present and future plight will usually be a significant feature of the emotional state” (p. 655). Thus, those who are hopeful likely experience concomitant anxiety. Conversely, fear may pave the way to feel hope as fearful individuals already appraise their situation as uncertain, and only the coping potential appraisal would need to shift to experience hope. Indeed, the appraisal-tendency framework (ATF; Han, Lerner, & Keltner, 2007) argues that it is easier for individuals to shift from one discrete emotional state to another if the two share some appraisal components.

Moreover, excitation transfer theory (ETT; Zillmann, 1983) supports the argument that fear aroused by the threat information in a fear appeal could translate into higher levels of hope after consuming the efficacy information. Specifically,

ETT asserts that the physiological arousal associated with an emotional experience decays slower than the associated cognitions. Therefore, if one is aroused physiologically, one’s emotional response to subsequent events is likely to be more intense than it would have been otherwise. Thus, if fear is aroused in response to threat-based information, any hope aroused in conjunction with efficacy-based information may be enhanced given the audiences’ already aroused state. In light of the above, we predict:

H2: Feelings of hope and fear in response to a fear appeal message will positively correlate.

Regarding hope’s persuasive influence within the context of fear appeals, recall that the hallmark of hope is persistence in the face of adversity. Thus, those who face a threat and feel hopeful should be more motivated to pursue protective behaviors. As well, given the well-established relationship between self-efficacy and behavioral enactment (Bandura, 1997), we expect self-efficacy to relate to behavioral intentions and actual behavior. Especially important, as explained earlier, we expect that those who believe themselves to be efficacious and who are also feeling hope are even more likely to take action. Thus we predict the following:

H3: Hope and self-efficacy perception will each positively correlate with (a) behavioral intentions, and (b) behaviors in response to a fear appeal.

H4: Self-efficacy perception and hope will interact such that those who are higher on both self-efficacy and hope will be more likely to support positive health behaviors compared to others.

To test these hypotheses, we draw from existing, as yet unpublished, data sets the authors had collected that (a) used fear appeal messages as stimuli, and (b) measured hope, fear, and perceived self-efficacy in response to the messages. Both studies used fear-based messages in the context of sun safety. The designs, samples, measures, and messages differ in multiple ways. However, each includes the requisite variables to address the above hypotheses.

Study 1 method

Sample

Three hundred and forty-one participants were recruited from Amazon’s Mechanical Turk (MTurk), an online platform that allows participants to complete tasks in exchange for a nominal payment. Participants were restricted to U.S. residents who had successfully completed at least 70% of their prior MTurk questionnaires. Participants ranged from 18- to 72-years old ($M = 31.56$, $SD = 11.44$), and 60% identified as male. The racial makeup of the sample (allowing for multiple category selections) was 76% Caucasian, 13% Asian or Pacific Islander, 7% Hispanic/Latino(a), 6% African-American, and 2% “Other.” Nearly half of the sample (46%) had at least a Bachelor’s degree. The study included participants from

across the U.S. and took place in the late summer such that the topic of sun safety was likely relevant to most of them.

Design/procedures

The study was described as focusing on user responses to online health information. After answering questions related to demographics and skin type, participants viewed a mock WebMD webpage featuring an interview with an expert identified as the chief of skin cancer research at the National Cancer Institute. The article's text was modeled after the skin-cancer related stimuli used in the high-threat, high-efficacy condition in Turner, Rimal, Morrison, and Kim (2006), and was presented at a 7.5 grade level based on the Flesch-Kincaid formula. The article was divided into three bolded subsections titled "How susceptible are most of us to skin cancer?", "How severe is skin cancer?", and "What actions can we take to prevent skin cancer, and how effective are these measures?" These subheadings were followed by information concerning skin cancer susceptibility, severity, and both response- and self-efficacy, respectively. After message exposure, participants completed a post-test before being debriefed and compensated. Of note, a framing manipulation was introduced after message exposure during the study, but it was unrelated to the stimuli and analyses indicated it had no effects on the reported results.

Measures

Prior to viewing the stimulus, participants reported demographic information as well as how their skin typically reacts to sunlight when they are not wearing sunscreen (burn tendency) on a 7-point scale (1 = *never burns*, 7 = *always burns*; $M = 3.99$, $SD = 1.80$). After message viewing, participants reported how much of several emotions they experienced on 7-point scales (1 = *not at all*, 7 = *very much*). Among these emotion items were three that related to hope (*hopeful, optimistic, encouraged*; $\alpha = .89$; $M = 3.00$, $SD = 1.59$) and four that related to fear (*fearful, afraid, scared, anxious*; $\alpha = .93$; $M = 3.20$, $SD = 1.66$).

Participants were then asked to rate their agreement on 7-point Likert scales (1 = *strongly disagree*, 7 = *strongly agree*), with three items adapted from Witte, Cameron, McKeon, and Berkowitz's (1996) *perceived self-efficacy scale*: "I am able to wear sunscreen and protective clothing and avoid tanning beds to prevent skin cancer;" "Wearing sunscreen and protective clothing and avoiding tanning beds to prevent skin cancer is easy to do;" and "Wearing sunscreen and protective clothing and avoiding tanning beds to prevent skin cancer is convenient" ($\alpha = .70$; $M = 5.72$, $SD = 1.00$). Three additional items adapted from Witte et al. assessed *perceived response efficacy*: "Wearing sunscreen and protective clothing and avoiding tanning beds works in preventing skin cancer;" "Wearing sunscreen and protective clothing and avoiding tanning beds are effective in preventing skin cancer;" and "If I wear sunscreen and protective clothing and avoid tanning beds, I am less likely to get skin cancer" ($\alpha = .89$; $M = 6.08$, $SD = .93$). *Perceived severity and susceptibility* to skin cancer were then assessed, each with three items on 7-point Likert scales adapted from Witte et al. The three items for severity

were: "I believe that skin cancer is: severe/serious/significant" ($\alpha = .91$; $M = 6.04$, $SD = .95$). The three susceptibility items were as follows: "I am at risk for skin cancer," "It is likely that I will get skin cancer," and "It is possible that I will get skin cancer" ($\alpha = .75$; $M = 4.60$, $SD = 1.20$).

Attitudes toward skin cancer prevention actions were assessed by asking participants to rate their agreement, from 1 (*strongly disagree*) to 7 (*strongly agree*), with two statements: "I feel that wearing sunscreen and protective clothing and avoiding tanning beds are wise things to do," and "I think that wearing sunscreen and protective clothing and avoiding tanning beds are more trouble than they are worth (*reverse coded*)," $r(339) = .38$, $p < .001$. Finally, *behavioral intentions* were measured with three items that asked participants to rate how likely, from 1 (*very unlikely*) to 7 (*very likely*), they were to wear sunscreen when outside, wear protective clothing when outside, and avoid using tanning beds ($\alpha = .51$; $M = 5.55$, $SD = 1.06$). Omitting the tanning bed item slightly boosted reliability, but because all three items clearly linked to actual skin safety behaviors, the above self-efficacy items mentioned all three behaviors, and comparability in measurement across constructs is of critical importance, we chose to use the 3-item index. Of note, analyses using a 2-item index (sunscreen and protective clothing use) revealed no significant differences in the results.

Study 1 results

Initial analyses

Participants experienced moderate levels of fear ($M = 3.20$, $SD = 1.66$), suggesting the message is appropriately labeled as a fear appeal. Participants also reported a notable level of hope ($M = 3.00$, $SD = 1.59$), which was significantly lower than reported fear, $t(340) = 2.21$, $p < .05$. Additionally, participants reported a strong degree of self-efficacy ($M = 5.72$, $SD = 1.00$).

Fear, hope, and efficacy

H1 predicted that self-efficacy and response-efficacy would positively correlate with hope. Controlling on burn tendency and gender, analyses support this prediction for both self-efficacy, $r_p(336) = .11$, $p = .04$, and response efficacy, $r_p(336) = .13$, $p = .02$. H2 predicted a positive correlation between fear and hope, which was also supported by the data, $r_p(336) = .19$, $p = .001$. Of note, fear and self-efficacy did not significantly correlate, $r_p(336) = -.08$, $p = .13$ (see Table 1). H3 predicted that hope and self-efficacy would each positively correlate with health-related behavioral intentions and behaviors. As this study did not include behavior measures, only the first two relationships are assessed. Correlational analyses revealed that hope did significantly and positively correlate with behavioral intentions, $r_p(336) = .19$, $p = .001$, as did self-efficacy, $r_p(336) = .47$, $p = .001$, supporting H3a. Interestingly, hope did not correlate with attitudes, $r_p(336) = -.02$, $p = .72$, a key predictor of intentions. Also of potential interest, fear evidenced a small correlation with attitudes, $r_p(336) = -.09$, $p = .11$, and intentions, $r(336) = .05$, $p = .40$, neither of which was statistically significant.

Table 1. Partial correlations among variables for study 1 and study 2.

		Hope	Fear	Self-efficacy	Response efficacy	Attitudes	Intentions	Behavior
Hope	Study 1	–	.19***	.11*	.13*	–.02	.19***	n/a
	Study 2	–	.29***	.21***	n/a	.00	.27***	.19***
Fear	Study 1		–	–.08	.03	–.09	.05	n/a
	Study 2		–	.11*	n/a	.04	.32***	.16**
Self-efficacy	Study 1			–	.49***	.39***	.47***	n/a
	Study 2			–	n/a	.22***	.52***	.26***

Note. Partial correlations for Study 1 control for burn tendency and gender. Partial correlations for Study 2 control for past behavior, gender, and topic relevance. *** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$.

H4 predicted that self-efficacy and hope would interact such that those higher on both self-efficacy and hope would be especially likely to support positive health behaviors. This hypothesis was tested with a hierarchical regression with sun safety intentions as the dependent variable. Burn tendency and gender were entered as control variables in Block 1, followed by self-efficacy, fear, and hope in Block 2. The third and final block contained the predicted hope-self-efficacy interaction term. Results revealed that hope ($\beta = .10$, $p = .04$), but not fear ($\beta = .06$, $p = .23$), evidenced a significant main effect on intentions. Further, in support of H4, a positive interaction emerged ($\beta = .10$, $p = .03$; see Figure 1). A simple slopes analysis revealed that at 1 SD below the mean of self-efficacy, hope predicted intentions ($\beta = .37$, $p < .001$), but less so than at 1 SD above the mean of self-efficacy where hope was a

stronger predictor of intentions ($\beta = .58$, $p < .001$), suggesting that participants who were high in both hope and self-efficacy were more likely to intend to protect their skin in the future.

To determine if these results would hold when considering other variables deemed important to fear appeal influence, we reran the above regression with control variables (gender, burn tendency) entered in Block 1, main effect variables entered Stepwise in Block 2 (hope, fear, self-efficacy, response-efficacy, severity, and susceptibility), and interaction terms entered Stepwise in the final block (hope-self-efficacy, hope-response-efficacy, fear-severity, fear-susceptibility). In light of a significant interaction between fear and susceptibility that emerged (despite neither variable evidencing a significant main effect), we reran the regression to allow the inclusion of both fear and susceptibility in Block 2. As

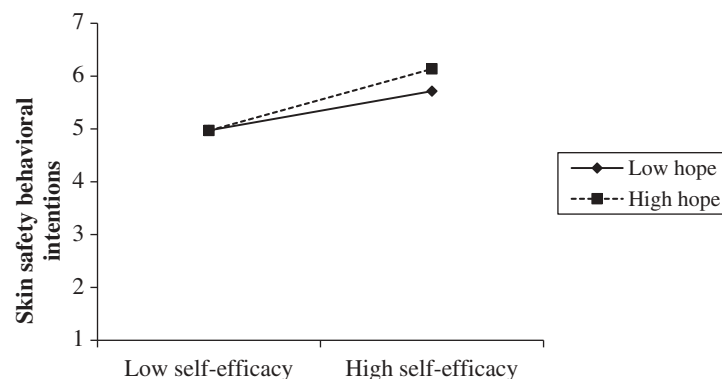
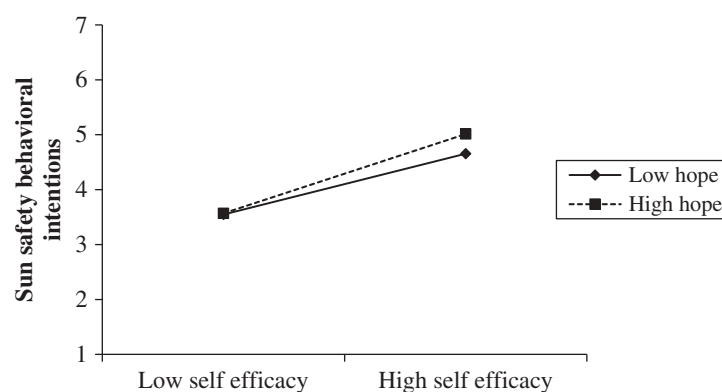
Interaction between self-efficacy and hope – Study 1**Interaction between self-efficacy and hope – Study 2****Figure 1.** Interactions between self-efficacy and hope for Studies 1 and 2.

Table 2. Study 1 regression results.

	Sun safety intentions	β	ΔR^2	Sun safety intentions	β	ΔR^2
Block 1	Burn tendency	.21***	.12***	Burn tendency	.19***	.12***
	Gender	.11*		Gender	.10*	
Block 2	Self-efficacy	.45***	.21***	Self-efficacy	.43***	.22***
	Fear	.06		Fear	.03	
	Hope	.10*		Hope	.10*	
				Severity	.11*	
Block 3				Susceptibility	.06	
	Efficacy x hope	.10*	.01*	Efficacy x hope	.10*	.01*
				Susceptibility x fear	-.10*	.01*

Note. *** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$.

shown in Table 2, self-efficacy ($\beta = .43$, $p < .001$) and hope ($\beta = .09$, $p = .046$) continued to serve as significant predictors of behavioral intentions. Perceived severity also emerged as a significant positive predictor ($\beta = .11$, $p = .03$). Further, the interactions of hope and self-efficacy ($\beta = .10$, $p = .03$) and fear and susceptibility ($\beta = -.10$, $p = .03$) were both significant, though in opposite directions. Thus, despite accounting for all logical fear appeal-related variables, hope continued to play a meaningful role in predicting sun safety intentions. Finally, a hierarchical regression with a similar architecture as that described above but with sun safety attitudes as the dependent variable, revealed only burn tendency ($\beta = .12$, $p = .02$) and self-efficacy ($\beta = .39$, $p < .001$) significantly predicted attitudes.

Discussion

This study offers initial evidence that hope plays a meaningful, though perhaps small, role in predicting fear appeal effectiveness. Hope and self-efficacy directly predicted intentions to engage in sun safety behaviors whereas fear did not. Additionally, a significant hope-self-efficacy interaction emerged in predicting behavioral intentions. In essence, the motivation from hope and the confidence from self-efficacy appeared to amplify each other to promote behavioral intentions. Moreover, neither response efficacy nor the hope-response efficacy interaction predicted intentions, supporting the notion that self-efficacy is the more proximal cognition related to the coping potential appraisals inherent in feelings of hope. Interestingly, the data did not reveal a role for either hope or fear in predicting sun safety attitudes, with the latter finding contradicting previous meta-analytic findings linking fear arousal and attitudes, intentions, and behaviors (Tannenbaum et al., 2015).

This study offers encouraging evidence to justify examining hope's role in fear appeals, though it had notable limitations. Although it benefitted from a diverse non-student sample, this study did not measure actual behavior nor did it control for previous sun safety behaviors. Additionally, several measures were multi-barreled due to the multiple behaviors mentioned in the message, which is less preferable to items that assess individual target behaviors. The low reliability of the behavioral intention index is also of concern, though the significant results despite this limitation suggest the findings are meaningful. Still, additional research is essential to determine if the results reported are replicable. Study 2

addresses the same hypotheses with the same topic of sun safety, but with a different message and sample, and with the inclusion of a behavior measure, which allows us to more fully consider the role of hope in fear appeals.

Study 2 method

Participants

Three hundred and eighty two undergraduate students participated in this research in exchange for course research credit. A majority of subjects were female (74%) and ranged in age from 18 to 26 ($M = 19.30$, $SD = 1.35$). The sample reflected diverse ethnicities with 38% reporting being Caucasian, 28% Asian, 21% Hispanic, 4% African-American, and 9% other. Of the original 382 participants, 367 completed the follow-up survey a week later. All data were collected in Spring and Fall at a university located in a coastal California community, where sun safety is a relevant issue year-round.

Design and procedures

The study was introduced as research interested in reactions to YouTube videos. Subjects completed a questionnaire that assessed, among other constructs, basic demographics, perceived knowledge about skin cancer, and skin cancer relevance. Participants then watched one of eight edited versions of a melanoma awareness video, *Dear 16-Year-Old-Me*, manipulated to remove humor, sad personal testimonials, and directives to share the message. Given all 8 versions contained the same severity and susceptibility information followed by the same response and self-efficacy information (i.e., the manipulations were unrelated to these constructs) and no significant differences on the key outcomes variables were linked to the manipulations ($ps > .10$), the conditions were combined for these analyses.

Immediately after viewing the stimuli, participants completed a series of questions assessing their emotional responses to the video, reactions to the health message, as well as their attitudes, intentions, and efficacy for engaging in sun safety behaviors. One-week after participation, subjects were sent an email asking them to complete a brief follow-up online questionnaire assessing message recall, engagement with the video since first viewing it, and sun safety behaviors in the past week. Given this research is only a portion of a larger study, only those measures relevant to the present analyses are described.

Measures

Prior to viewing the message, participants indicated the personal relevance of skin cancer with four items assessed on 1 (*not at all*) to 7 (*very much*) scales: "Skin cancer is: relevant to me, important to me, relevant to people I care about, important to people I care about." These items formed a single-factor reliable index ($\alpha = .85$; $M = 4.63$, $SD = 1.58$). After message exposure, participants indicated their range of emotional reactions to the message on a series of 1 (*not at all*) to 7 (*very much*) scales. Among these, three items related to fear (*anxious*, *worried*, *afraid*; $\alpha = .83$; $M = 4.37$, $SD = 1.57$) and

two related to hope (drawn from Prestin, 2013; *hope, inspired*; $r = .50$, $p < .001$; $M = 3.99$, $SD = 1.48$). Analyses with the single item “hopeful” yielded virtually identical results as the 2-item index, thus supporting the use of the synonym “inspired” in the index.

To assess *post-viewing attitudes*, subjects responded to three sets of 7-point semantic differential scales (1 = *bad/negative/unfavorable*, 7 = *good/positive/favorable*) for three health behaviors: wearing sunscreen every day, checking skin monthly for changes that could signify skin cancer, and visiting a dermatologist for a skin cancer screening. These items combined to form a single measure of attitude toward sun safety behavior ($\alpha = .94$; $M = 5.87$, $SD = 1.33$).

Perceived severity and susceptibility to skin cancer were then assessed, each with two items on 7-point Likert scales. The two severity items (“Skin cancer is a serious health threat”, “If I were to get skin cancer, it would be devastating to my life”; $r = .43$, $p < .001$; $M = 6.05$, $SD = 1.06$) significantly correlated as did the two susceptibility items (“I am at risk for skin cancer”, “At some point in my life, there is a good chance that I will be diagnosed with skin cancer”; $r = .71$, $p < .001$; $M = 4.50$, $SD = 1.63$).

Sun safety self-efficacy was measured with four items on 7-point Likert scales (1 = *strongly disagree*, 7 = *strongly agree*) and included items such as “I believe I can apply sunscreen daily” and “I am able to avoid excessive sun exposure” ($\alpha = .70$; $M = 5.41$, $SD = 1.12$).

Eight items assessed intentions to engage in *sun safety behaviors*. Four items were measured on 7-point Likert scales (1 = *strongly disagree*, 7 = *strongly agree*): “I plan: to use sunscreen daily in the coming weeks, to check my skin once a month, to see a dermatologist in the near future, and to use clothes for sun protection (e.g., hats, long-sleeves) regularly in the weeks ahead”. Four additional items asked how likely they were to engage in each of those four behaviors. The eight items combined to form a reliable scale ($\alpha = .88$; $M = 4.71$, $SD = 1.35$).

After demographic assessments, participants were asked if in the past they had engaged in a range of six skin cancer prevention and detection behaviors: avoided sun exposure, wore sunscreen on the face daily, wore sunscreen on other exposed body areas daily, wore protective clothing, performed a skin self-exam, and visited a dermatologist to assess changes in the skin. The items were summed to create a 0–6 scale of past behavior ($M = 1.88$, $SD = 1.35$).

Finally, in the follow-up survey completed on-line one week after the lab session, participants were asked to indicate if they had engaged in a variety of sun safety behaviors in the past week: increased sunscreen use, avoided excessive sun exposure, wore protective clothing, performed a skin self-examination, and contacted health services for a skin exam. The number of behaviors performed were counted to create a 0–5 scale ($M = 1.60$, $SD = 1.36$).

Study 2 results

Initial analyses

Descriptive analyses revealed that participants experienced moderate levels of fear after viewing the video ($M = 4.37$, $SD = 1.57$), suggesting the message was appropriately categorized as a fear

appeal. Importantly, the message also evoked moderate levels of hope ($M = 3.99$, $SD = 1.48$), though significantly lower than fear arousal, $t(380) = 4.11$, $p < .001$. Participants also reported a strong degree of self-efficacy ($M = 5.41$, $SD = 1.12$). Because response-efficacy was not assessed in this study, only the hypotheses related to self-efficacy are tested.

Hope, fear, and self-efficacy

H1-2 predicted that hope would positively correlate with both self-efficacy and fear. Controlling for past sun safety behavior, sun safety relevance, gender, and ethnicity (White vs. non-White), hope positively correlated with both self-efficacy, $r_p(366) = .21$, $p < .001$ and fear, $r_p(366) = .29$, $p < .001$, thus supporting H1-2 (see Table 1). Of note, fear and self-efficacy maintained a small relationship approaching statistical significance, $r_p(366) = .10$, $p = .056$. H3a-b predicted that hope and self-efficacy would each associate with behavioral intentions and behavior. As expected, controlling on the variables noted above, hope positively correlated with sun safety intentions, $r_p(366) = .27$, $p < .001$, and with increased sun safety behavior one week later, $r_p(366) = .19$, $p < .001$, as did self-efficacy: intentions $r_p(366) = .52$, $p < .001$, and behavior $r_p(366) = .26$, $p < .001$. These results support H3a-b. Interestingly, as in Study 1, hope did not associate with sun safety attitudes immediately after message exposure, $r_p(366) = .00$, $p = .96$, nor did fear, $r_p(366) = .04$, $p = .41$, though fear did correlate with intentions, $r_p(366) = .32$, $p < .001$, and with behavior one week later, $r_p(366) = .16$, $p = .002$.

H4 predicted that self-efficacy and hope would interact such that those high on both self-efficacy and hope would be especially likely to support positive health behaviors. A hierarchical regression was performed in which past behavior, sun safety relevance, gender (0 = male, 1 = female), and race (0 = non-White, 1 = White) were entered as control variables into Block 1; fear, hope, and self-efficacy were entered into Block 2; and the hope-self-efficacy interaction was entered into Block 3. Results indicated a significant main effect for fear ($\beta = .21$, $p < .001$) and self-efficacy ($\beta = .47$, $p < .001$), and a suggestive effect for hope ($\beta = .07$, $p = .065$). Further, in support of H4, a significant hope-self-efficacy interaction emerged ($\beta = .08$, $p = .04$), suggesting the effects of self-efficacy were stronger for those who were also experiencing hope (see Table 3). A simple slopes analysis at 1 SD above and below the mean supported this interpretation. That is, when self-efficacy was relatively low, level of hope did not appear to influence behavioral intentions ($p = .12$). However, when self-efficacy was relatively high, those who felt more hope expressed stronger intentions to engage in sun safety behaviors than those lower in hope ($p = .048$; see Figure 1).

To examine the influence of these variables on behavior, we ran a comparable hierarchical regression with sun safety behavior after one week as the dependent variable. Significant main effects for self-efficacy ($\beta = .26$, $p < .001$) and fear ($\beta = .11$, $p = .03$), and an effect approaching significance for hope ($\beta = .10$, $p = .059$), emerged. However, when the interaction of hope and self-efficacy was added to the model, it was not significant, though the effect size was similar as for intentions ($\beta = .06$, $p = .21$; see Table 3). Notably, when behavioral

Table 3. Study 2 regression results.

	Sun safety intentions	β	ΔR^2	Sun safety behavior (1 week) ^a	β	ΔR^2
Block 1	Past behavior	.19***	.31***	Past behavior	.22***	.12***
	Relevance	.18***		Relevance	.01	
	Gender	.10**		Gender	.03	
	Race	-.03		Race	.03	
Block 2	Self-efficacy	.47***	.24***	Self-efficacy	.27***	.09***
	Fear	.21***		Fear	.12*	
	Hope	.07		Hope	.09 [†]	
Block 3	Efficacy x hope	.08*	.01*	Efficacy x hope	.06	

Note. *** $p < .001$, ** $p < .01$, * $p < .05$, [†] $p < .10$. ^a When behavioral intentions is added to this model, self-efficacy, fear, and hope are no longer significant.

intentions after message exposure was introduced into the model, it was the sole predictor of future behavior ($\beta = .38$, $p < .001$). Thus, any influence of the cognitive and emotional reactions to the message on actual behavior were most likely mediated by behavioral intentions.

To determine if these relationships would withstand the inclusion of other variables deemed important to fear appeal success, we reran the above-described regressions, this time including perceived susceptibility and severity along with their interactions with fear. Again, because response efficacy was not assessed in this study, it could not be included. For behavioral intent as well as behavior, the inclusion of perceived severity and susceptibility did not alter the above reported findings. Neither variable was significant in the models ($ps > .15$) nor were their interactions with fear ($ps > .20$). Thus, the inclusion of the cognitive underpinnings of fear were not useful in predicting persuasive outcomes beyond self-efficacy, fear, and hope.

Finally, regarding attitudes toward sun safety behaviors, a regression with the same architecture as that reported above indicated that only self-efficacy significantly associated with post-message sun safety attitudes ($\beta = .25$, $p < .001$), which is unsurprising given neither hope nor fear evidenced a correlation with post-message attitudes.

Discussion

Fear appeal theorizing has been driven by the assumption that fear is the dominant emotional force underlying message effects with little regard for the role other emotions may play in generating desired persuasive outcomes. Even with evidence that fear appeals evoke multiple emotions (Dillard et al., 1996), the notion that another emotion might centrally and systematically contribute to fear appeal success has been neglected. In light of the conceptual link between self-efficacy and hope, which is supported by appraisal theories of emotion (e.g., Lazarus, 1991) and affect-as-information perspectives (e.g., Schwarz & Clore, 2003), together with the concept of emotional flow (Nabi, 2015), we sought to determine if hope, presumably generated by a fear-based message's efficacy component, enhances fear appeal effectiveness. Indeed, results across two studies, with different samples and different messages about the dangers of sun exposure, yielded similar findings, supporting a meaningful influence of hope.

In both studies, hope and self-efficacy evidenced a small but significant relationship with each other, which is a novel finding in the fear appeal literature, though consistent with past literature in psychology (e.g., Magaletta & Oliver, 1999; O'Sullivan, 2011). Further, hope and fear correlated in both studies in the .20 range, which not only supports the conceptual overlap between the appraisals associated with both emotions (Lazarus, 1991), but also highlights the notion that fear arousal may facilitate feelings of hope.

Importantly, hope positively associated with sun safety intentions and behavior, though it did not relate to sun safety attitudes. These findings are consistent with the conceptualization of hope as a motivator of behavior while also suggesting that hope may not necessarily be as relevant to shaping attitudes. That is, one might have a more negative attitude toward a behavior yet still be motivated to perform it when feeling hopeful about a desired outcome. This finding is particularly salient for fear appeals that aim to change unpleasant behaviors (e.g., the time-consuming, uncomfortable task of applying sunscreen) in that assessing attitudes alone in such contexts may not allow researchers to accurately predict behavioral outcomes. This is a unique take on the attitude-intention-behavior chain that warrants additional investigation.

In looking more broadly at behavioral intentions and behavior, it is clear that self-efficacy remains the strongest predictor of these outcomes, which is expected given its specificity in linking perceived ability to perform a particular behavior with intentions to do so. Interestingly, in Study 1, hope, but not fear, predicted intentions, but in Study 2, fear, but not hope, predicted intentions while both fear and hope predicted reported sun safety behavior over the course of the following week. Combined, these studies suggest a potentially valuable role for hope in fear appeal effectiveness, though the conditions under which it directly relates to behavior-related outcomes are not quite clear. Importantly, in both studies, a positive interaction between hope and self-efficacy emerged, indicating that those with higher self-efficacy perceptions who are also feeling more hopeful are more likely to intend to perform the desired behavior. Given behavioral intention is the most direct predictor of behavior, and indeed served this function in Study 2, these data suggest that hopeful feelings generated by fear appeals may enhance message effectiveness, especially for those who believe they can perform the target behavior.

Given the messages used in these studies were not designed nor manipulated to enhance hope, it is unsurprising that the effect sizes are small. Yet, the fact that hope emerged as a relevant variable when the messages were not designed to evoke it suggests that the standard fear appeal structure already lends itself to hope evocation. Further, the small effects documented here emerged *after* accounting for all other relevant cognitive and emotional variables associated with fear appeal effectiveness, including self-efficacy. In fact, when considering the partial correlation analyses, hope evidenced a stronger effect on behavioral intentions than fear in Study 1 and comparable effects on both intentions and behavior in Study 2 (see Table 1).

Still, the issue of magnitude of effects raises an intriguing question: What if message designers purposefully generated hope within fear appeals? That is, rather than simply letting people know what they can do (response-efficacy) and assuring them that they can do it (self-efficacy), which may spark hope on their own, it could be valuable to also encourage audiences to *feel* that engaging in the recommended behavior will lead to desired outcomes to increase the amount of hope that audiences experience. According to Lazarus (1991), hope evocation might be accomplished by including message features that evoke uncertainty about the future along with the possibility of a desired future outcome. Approaches potentially consistent with this goal include showing attractive models achieving desirable outcomes (Bandura, 2001), gain frames (Rothman, Martino, Bedell, Detweiler, & Salovey, 1999), self-affirmation cues (Steele, 1988), and framing the situation as an opportunity (Chadwick, Zoccola, Figueiroa, & Rabideau, 2016), among others (see also Chadwick, 2015; MacInnis & deMello, 2005). Future research would be well-served by exploring these possibilities.

Of particular import, as noted above, the outcomes associated with hope did not change after including the four cognitions typically assessed in fear appeal research. This confirms that the influence of hope is not otherwise captured by these variables. Of interest, in Study 1 a significant fear-susceptibility interaction emerged. Given it was not replicated in Study 2, we do not wish to overstate its meaning. However, we do find it interesting that because past fear appeal theorizing has considered severity and susceptibility as precursors to fear, interactions between these cognitions and emotional arousal have not been explored. The fear-susceptibility interaction found here suggests that perhaps fear may not only stem from these perceptions but may also amplify (or suppress) their influence on behavior-related outcomes.

Toward a recursive model of fear appeals

In light of the differences in messages, samples, and measures across the two studies, the convergence in findings around the added value of hope is encouraging for building a more accurate model for predicting fear appeal effectiveness. Indeed, beyond merely adding hope to fear appeal models, this work can advance fear appeal theorizing by considering more seriously the recursive relationship between emotions and cognitions. The most recent fear appeal theorizing (EPPM; Witte, 1992) suggests that perceptions of severity and susceptibility can generate fear and that fear motivates consideration of efficacy. However, the recursivity of cognitions and emotion suggests a different story. That is, perhaps perceptions of severity and susceptibility generate fear, which in turn reinforce and heighten the perception of threat. Further, perceptions of response and self-efficacy might promote feelings of hope, which in turn reinforce and heighten efficacy perceptions. Thus, the value of emotional arousal in fear appeals—and emotional appeals more generally—may be less about direct effects on outcomes of interest, particularly those that take place over time, but rather how those emotions influence the beliefs that may have more enduring effects.

There is clearly much research needed to test these ideas. Although we were able to document a relationship between

self-efficacy and hope, neither study was well suited to consider how all four cognitions deemed central to fear appeal effectiveness interrelate with fear and hope to predict attitudes, intentions, and behaviors. Relatedly, we did not directly tackle both the danger- and fear-control processes proposed in the EPPM. We assumed, and provide evidence, that hope's role lies within the danger control process leading to adaptive action. We do not see hope playing a role in fear control as hope exists only when one sees their situation as goal incongruent (Lazarus, 1999). If one engages in the cognitive distortions associated with fear control (e.g., denial, threat minimization), the existence of the negative situation is denied and a key appraisal element underlying hope—goal incongruence—is eliminated. Further, if one felt hope in response to the threatening component of the message, not only would perceptions of threat susceptibility likely be low, but that hope would likely boost efficacy perceptions and, in turn, the likelihood of danger control. Still, determining if hope plays a role in either fear control or threat perception is an open question. Relatedly, we must also address where hope and fear are strongest during message exposure. We assert, based on appraisal theory, that fear is highest during exposure to the threat component of the message and ebbs during the efficacy component (consistent with Dillard et al., 2017) whereas hope is highest during the efficacy component of the message. However, we do not have the data currently to test this supposition.

In sum, this research sets the stage for developing a new model of fear appeals, though it is as yet too soon to present a complete model that reflects the dynamic nature of fear appeal processing that we envision. Future research investigating the ideas laid out here is necessary to ensure a proposed model has evidentiary support. As such, we encourage research that will examine the recursive nature of cognitions related to both fear and hope and their subsequent influence on persuasive outcomes.

To capitalize on these conceptual advances, limitations in this research will need to be addressed. First, the messages in these studies were designed as strong fear appeals and thus did not vary either fear or hope, which limits our ability to speak to hope's role in strong versus weak fear appeals as well as how hope might be aroused. As such, these studies offer a rather conservative test of the hypotheses, but beg additional testing. Next, given we envision fear appeal processing to be a dynamic emotional experience, dynamic real-time measures of discrete emotional arousal are needed. Continuous indicators of emotional experiences may provide insights as to how emotional flow from fear to hope relates to post-message efficacy perceptions and, in turn, persuasive outcomes (see Dillard et al., 2017, for an example of dynamic measurement of fear). It is not a question of whether emotions or cognitions are more powerful predictors of effects, but rather how they interrelate to jointly impact message outcomes.

Further, because both studies focused on the issue of sun safety, it is possible that the impact of hope may differ for other diseases or behaviors. This concern is especially noteworthy given the lack of relationship between fear and sun safety attitudes in both studies, in contradiction to general

findings of fear appeals (Tannenbaum et al., 2015). It may be that for behaviors that are more challenging to perform, for example, hope would play an even larger role as motivation to persist toward a distant goal is crucial in such circumstances. Research exploring hope in fear appeals about a range of health behaviors would be most welcome.

Finally, future work would be well-served by examining whether another emotional state—relief—might also be linked to the presentation of efficacy information. This is important as hope, which Lazarus (1999) defines as a desire for relief, motivates action. However, relief itself, which Lazarus (1991) asserts is aroused when a distressing situation has been resolved, is associated with inaction. Thus, if efficacy information promotes relief, that may be counterproductive relative to the evocation of hope.

To conclude, fear appeal theorizing has stagnated in recent years, with the last significant theoretical advancement introduced 25 years ago. With little evidence that any theoretical model is well-supported by the data, the timing is right to reconsider how the elements typically associated with fear-based messages result in the influence that has been well-documented in multiple meta-analyses. Consistent with previous theorizing, this research demonstrates across two studies that hope explains unique variance in fear appeal effectiveness. We thus suggest that considering how threat and efficacy perceptions influence—and are influenced by—fear and hope arousal could be valuable avenues for future research. For now, however, we feel confident suggesting that future investigations into the persuasive effects of fear would be well-served to reflect on the relevance and value of hope.

References

- Averill, J. R. (1994). The eyes of the beholder. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion* (pp. 7–14). New York, NY, USA: Oxford University Press.
- Averill, J. R., Catlin, G., & Chon, K. K. (1990). *Rules of hope*. New York, NY, USA: Springer-Verlag. doi:10.1007/978-1-4613-9674-1
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY, USA: W. H. Freeman.
- Bandura, A. (2001). Social cognitive theory of mass communication. *Media Psychology*, 3, 265–299.
- Chadwick, A. E. (2015). Toward a theory of persuasive hope: Effects of cognitive appraisals, hope appeals, and hope in the context of climate change. *Health Communication*, 30, 598–611.
- Chadwick, A. E., Zoccola, P. M., Figueroa, W. S., & Rabideau, E. M. (2016). Communication and stress: Effects of hope evocation and rumination messages on heart rate, anxiety, and emotions after a stressor. *Health Communication*, 1–13. doi:10.1080/10410236.2015.1079759
- Damasio, A. R. (1994). *Descartes' error: Emotion, reason, and the human brain*. Avon, New York: Putnam Publishing.
- Dillard, J. P., Li, R., Meczkowski, E., Yang, C., & Shen, L. (2017). Fear responses to threat appeals functional form, methodological considerations, and correspondence between static and dynamic data. *Communication Research*, 44, 997–1018.
- Dillard, J. P., Plotnick, C. A., Godbold, L. C., Freimuth, V. S., & Edgar, T. (1996). The multiple affective outcomes of AIDS PSAs: Fear appeals do more than scare people. *Communication Research*, 23, 44–72.
- Han, S., Lerner, J. S., & Keltner, D. (2007). Feelings and consumer decision making: The appraisal-tendency framework. *Journal of Consumer Psychology*, 17, 158–168.
- Hovland, C. I., Janis, I. L., & Kelley, H. H. (1953). *Communication and persuasion*. New Haven, CT: Yale University Press.
- Lazarus, R. S. (1991). *Emotion and adaptation*. Oxford, England: Oxford University Press.
- Lazarus, R. S. (1999). Hope: An emotion and a vital coping resource against despair. *Social Research*, 66, 653–678.
- Leventhal, H. (1970). Findings and theory in the study of fear communications. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 5, pp. 119–186). New York, NY, USA: Academic Press.
- Loewenstein, G. F., Weber, E. U., Hsee, C. K., & Welch, E. S. (2001). Risk as feelings. *Psychological Bulletin*, 127, 267–286.
- MacInnis, D. J., & De Mello, G. E. (2005). The concept of hope and its relevance to product evaluation and choice. *Journal of Marketing*, 69, 1–14.
- Magaletta, P. R., & Oliver, J. M. (1999). The hope construct, will, and ways: Their relations with self-efficacy, optimism, and general well-being. *Journal of Clinical Psychology*, 55, 539–551.
- Mongeau, P. (1998). Another look at fear-arousing persuasive appeals. In M. Allen & R. W. Preiss (Eds.), *Persuasion: Advances through meta-analysis* (pp. 53–68). Cresskill, NJ: Hampton.
- Mongeau, P. A. (2013). Fear appeals. In J. P. Dillard & L. Shen (Eds.), *The SAGE handbook of persuasion: Developments in theory and practice* (pp. 184–199). Thousand Oaks, CA: Sage.
- Myrick, J. G., & Nabi, R. L. (2017). Fear arousal and health and risk messaging. In R. Parrott (Ed.), *Oxford research encyclopedia of health and risk message design and processing* New York, NY, USA: Oxford University Press. doi:10.1093/acrefore/9780190228613.013.266
- Nabi, R. L. (2010). The case for emphasizing discrete emotions in communication research. *Communication Monographs*, 77, 153–159.
- Nabi, R. L. (2015). Emotional flow in persuasive health messages. *Health Communication*, 30, 114–124.
- O'Sullivan, G. (2011). The relationship between hope, eustress, self-efficacy, and life satisfaction among undergraduates. *Social Indicators Research*, 101, 155–172.
- Popova, L. (2012). The extended parallel process model: Illuminating the gaps in research. *Health Education & Behavior*, 39, 455–473.
- Prestin, A. L. (2013). The pursuit of hopefulness: Operationalizing hope in entertainment media narratives. *Media Psychology*, 16, 318–346.
- Rogers, R. W. (1975). A protection motivation theory of fear appeals and attitude change. *Journal of Psychology*, 91, 93–114.
- Rogers, R. W. (1983). Cognitive and physiological processes in fear appeals and attitude change: A revised theory of protection motivation. In J. T. Cacioppo & R. E. Petty (Eds.), *Social psychophysiology* (pp. 153–176). New York, NY, USA: Guilford.
- Rothman, A. J., Martino, S. C., Bedell, B. T., Detweiler, J. B., & Salovey, P. (1999). The systematic influence of gain- and loss-framed messages on interest in and use of different types of health behavior. *Personality and Social Psychology Bulletin*, 25, 1355–1369.
- Schwarz, N., & Clore, G. L. (2003). Mood as Information: 20 years later. *Psychological Inquiry*, 14, 296–303.
- Slovic, P., Finucane, M. L., Peters, E., & MacGregor, D. G. (2007). The affect heuristic. *European Journal of Operational Research*, 177, 1333–1352.
- Snyder, C. R. (2000). Hypothesis: There is hope. In C. R. Snyder (Ed.), *Handbook of hope: Theory, measures, and applications* (pp. 3–21). San Diego, CA, USA: Academic Press. doi:10.1016/B978-012654050-5/50003-8
- Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry*, 13, 1047–1084.
- Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., ... Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, 60, 570–585.
- Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. *Advances in Experimental Social Psychology*, 21, 261–302.
- Stotland, E. (1969). *The psychology of hope*. San Francisco, CA, USA: Jossey-Bass.
- Tannenbaum, M. B., Hepler, J., Zimmerman, R. S., Saul, L., Jacobs, S., Wilson, K., & Albarracín, D. (2015). Appealing to fear: A meta-

- analysis of fear appeal effectiveness and theories. *Psychological Bulletin*, 141, 1178–1204.
- Turner, M. M., Rimal, R. N., Morrison, D., & Kim, H. (2006). The role of anxiety in seeking and retaining risk information: Testing the risk perception attitude framework in two studies. *Human Communication Research*, 32, 130–156.
- Witte, K. (1992). Putting the fear back into fear appeals: The extended parallel process model. *Communication Monographs*, 59, 329–349.
- Witte, K., & Allen, M. (2000). A meta-analysis of fear appeals: Implications for effective public health campaigns. *Health Education & Behavior*, 27, 591–615.
- Witte, K., Cameron, K. A., McKeon, J. K., & Berkowitz, J. M. (1996). Predicting risk behaviors: Development and validation of a diagnostic scale. *Journal of Health Communication*, 1, 317–342.
- Zillmann, D. (1983). Transfer of excitation in emotional behavior. In J. T. Cacioppo & R. E. Petty (Eds.), *Social psychophysiology: A sourcebook* (pp. 215–240). New York, NY, USA: Guilford.

Copyright of Health Communication is the property of Taylor & Francis Ltd and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.