

The role of construal fit in threat appeal to persuade young drivers not to text while driving

The role of
construal fit

Dongjae (Jay) Lim

*Department of Advertising and Public Relations, University of Georgia Grady
College of Journalism and Mass Communication, Athens, Georgia, USA*

Jhieh-Syuan Lin

*Associate Professor, Department of Advertising,
College of Communication Taiwan Institute of Governance and
Communication Research National Chengchi University Taipei, Taiwan*

Un Chae Chung

*Institute of Communications Research, University of Illinois at Urbana-
Champaign, Champaign, Illinois, USA, and*

Youngjee Ko

*Department of Advertising and Public Relations, University of Georgia Grady
College of Journalism and Mass Communication, Athens, Georgia, USA*

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Abstract

Purpose – This paper aims to investigate the effect of matching social distance and the concrete/abstract visual presentation of the threats of distracted driving in campaign design.

Design/methodology/approach – This study conducts a series of 2 (social distance frame: close vs distant) × 2 (visual rhetoric style: literal vs metaphorical) online experiments on the perspective of the construal level theory.

Findings – This study identified that a fit between social distance and visual rhetoric style of the threat enhances the effect of a social marketing campaign targeting young adults. A message framed in terms of socially proximal entities shows a favorable impact on young drivers' threat perception and behavioral intention when the visual rhetoric depicts the threats of texting while driving more concrete. On the other hand, more distant social entities in the message show a better impact when the threats are visualized in metaphor.

Originality/value – This paper enhances the understanding of a threat appeal message design by adding empirical evidence of matching visual rhetoric style and social distance. The findings provide theoretical and practical implications for social marketing campaigns, regarding the strategic tailoring of messages, particularly in public service announcements that discourage texting while driving on young adults.

Keywords Social marketing, Advertising, Behavior/attitudes, Message framing, Accident prevention/road safety

Paper type Research paper



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Many behaviors constitute distracted driving, but using a cellular phone while driving is a particularly risky one. Using a cellular device to send or read text messages while operating a vehicle has recently come to the attention of traffic safety experts, the public and academic researchers (Berenbaum *et al.*, 2019; Diegelmann *et al.*, 2020; McBride *et al.*, 2020). With the recognition that texting while driving is a serious problem among young adults (for the purpose of this study, young people are defined as persons aged between 18 and 24 years), many attempts have been made to reduce such behaviors and encourage responsible driving (Berenbaum *et al.*, 2019). Social marketing campaigns have grappled with the question of whether and how threats could persuade young adults to abstain from distracted driving. Threat appeals are “persuasive messages designed to scare people by describing the terrible things that will happen to them if they do not do what the message recommends” (Witte, 1992, p. 329). However, studies about threat appeals have indicated that their effectiveness among young adults is questionable because this demographic views threats depicted in the message as personally irrelevant (Hastings and MacFadyen, 2002; Hastings *et al.*, 2004). This implies that solely using threat appeals to prevent texting while driving may not be effective for altering the behavior of young adults.

Research has demonstrated the complexity of using threat appeals and suggested that other appropriate message elements may determine their effectiveness (Keller and Lehmann, 2008; Keller *et al.*, 2003). One frequently used tactic in social marketing is social distance framing, which emphasizes what the target audience’s close social groups (e.g. family, friends or peers) would think of them if they engaged in the risky behavior (Southwell and Yzer, 2009; Wang, 2016). Prior studies found that people adapt recommended behaviors when someone close in their life wants them to change or is suffering from the threatful situation depicted in the message (Cismaru and Wuth, 2019). Many social marketing and public health campaigns that focus on issues such as binge drinking or smoking have demonstrated that using close social distance framing in messages was effective for communicating threats to young adults (Park and Morton, 2015; Wolburg, 2001). However, in the context of texting while driving, studies have produced equivocal results on the effect of social distance framing (Gauld *et al.*, 2014). Thus, this research examines further message elements that enhance the impact of social distance intervention in threat appeal-based social marketing campaigns.

Based on the construal level theory (CLT; Liberman and Trope, 1998), the current paper proposes that construal fit, a fit between the distance of a social group (distant versus close) and a visual rhetoric style of threat (metaphorical versus literal), would have a greater impact on young adults’ threat perception and behavioral intention. We hypothesize that when the message use reminds young drivers of their close social groups (e.g. family or friends), a message depicting threatful situations with more concrete and vivid images would improve the overall persuasiveness due to the congruency of visuals and individuals’ low-level construal, while the opposite (i.e. metaphorical visual depiction and high-level construal) would also hold true.

Through a series of experiments, the study shows that message framing that reminds the target demographic of close social entities is more effective when combined with a concrete visualization of threatful outcomes, while the distant social entities is effective with a metaphorical visualization. The first experiment shows that a fit between social distance and visual rhetoric style leads to a higher perception of threat and favorable intention to not engage in texting while driving. The second experiment replicates the first study with print public service announcements (PSAs) and investigates whether higher threat perception mediates young drivers’ intention to use a text blocking application while driving (as a means to stop texting while driving), rating the responsibility of a texting driver in a car collision scenario. The findings provide important theoretical and practical implications for future research on social marketing campaigns that use threat appeals regarding the strategic tailoring of messages, particularly in campaigns that discourage texting while driving, targeting young drivers.

Literature review and theoretical framework

Threat appeals in social marketing

Social marketing concepts are used to encourage individuals to behave in socially desirable ways (e.g. wearing seat belts, not smoking and not driving while distracted). The idea behind social marketing is to link the value of the socially desired behavior to the individual, encouraging them to voluntarily comply to ensure the well-being of the many (Kotler and Zaltman, 1971). Because recommended behaviors may not be germane to personal motivation, practitioners often rely on emotional appeals to persuade the public (Lennon *et al.*, 2010).

Among many other positive and negative emotional appeals, threat appeals are commonly used in social marketing campaigns as a message strategy to change risky behaviors, including texting while driving. Threat appeals induce fear arousals from the target audience through depicting threatening outcomes and suggest alternative behaviors to avoid such harm (Donovan and Henley, 1997; Lewis *et al.*, 2007; Witte, 1992). It is important to note that threats illustrate undesirable results of certain behaviors, while fear is a potential emotion that is evoked by the threat. Although some studies use the terms “fear appeals” and “threat appeals” synonymously, this study focuses on threat appeals, as the concept of threat is addressed by the message content, while the concept of fear relates to the audience’s reactions (Donovan and Henley, 1997; Lewis *et al.*, 2007).

As of March 2020, 48 states and the District of Columbia in the USA prohibit manually engaging in text-based communication while driving (Kim and Wang, 2020; IIHS, 2019). However, several surveys and roadside observations have shown that texting while driving is still widespread among young adults (Olsen *et al.*, 2013; Lipovac *et al.*, 2017). Young adults (age 18–24) generally reported that texting while driving was dangerous, unacceptable and illegal, but they admitted to having engaged in it nonetheless (Prat *et al.*, 2015). Almost 80% of this age group report having sent a text message while driving (AT&T, 2015), and one out of five stated they were “not familiar at all” with the state’s texting while driving regulations (Covington, 2020).

Studies found that threat appeals are promising intervention strategies for the public health challenge of texting while driving (Hayashi *et al.*, 2019). However, despite the popularity of threat appeals in PSAs, studies on distracted driving among young adults have produced ambiguous results on their effectiveness. Cismaru (2014) conducted a content analysis of campaigns against texting while driving and found that when the campaigns were specifically targeted to young adults, they failed to address the efficacy of the recommended behavior (i.e. ceasing the use of cellphones while driving). Moreover, although they were aware of the potentially negative consequences of engaging in such risky behaviors, young drivers chose to stay connected with others (White *et al.*, 2012). Watters and Beck (2016) identified texting while driving as the most topical distracted driving issue in this age group, which participants answered very difficult to stop it, with low perceived susceptibility and severity of threats. This implies that young adults’ perception of the threat does not meet the threshold for preventing them from engaging in the behavior. To increase the effectiveness of threat appeals in the context of campaigns against texting while driving, we suggest that incorporating additional elements in the messaging would maximize the likelihood of young drivers believing that they are susceptible to a serious threat, thereby motivating them to adopt the recommended behaviors.

Social distance and construal level theory

A critical issue influencing texting while driving among young adults is that such behavior involves their need to stay connected with others (Berenbaum *et al.*, 2019; White *et al.*, 2012),

which is related to social distance. The concept of social distance posits that the perceptual gap regarding the effects of media on others relative to self amplifies as the distance increases between the evaluator and the subjects of comparison (Park and Morton, 2015). For example, when a person receives a message of the danger of binge drinking, the influence of the message widens when a receiver considers the message with a closer social group, such as family, friends or peers. Numerous studies in social marketing have tested the effect of social distance framing, such as comparison of close groups (family, friends or partners) versus remote groups (people in general), and examine which messages framed in such a way have a more substantial influence on personal behavior (Borsari and Carey, 2001). It has been suggested that highlighting the threatening consequences of texting while driving in a close social distance is an efficient strategy for preventing this behavior among young adult drivers. For example, Lennon *et al.* (2010) suggested that depicting people who had lost friends and family members due to texting while driving greatly influenced the future behavioral intention of young drivers. Rozario *et al.* (2010) also found that subjective social norms were predictive of a willingness to use a cellular phone while driving when the intervention scenario included the presence of friends.

The first goal of this study is to examine whether young drivers would stop texting while driving when they considered the threat through the lens of a close social group (e.g. family, friends, peers). Studies indicated that PSAs that use threat appeals in a social context require further elements to lead the target group to actually interpret the threat as being within a close social distance (Rozario *et al.*, 2010). Indeed, message framing that simply mentions a close social groups in the text would be insufficient to induce actual behavioral changes. Transcending such limitations of social distance message framing, this study proposes matching visual features as additional important factors that could influence young drivers' attitudes and behaviors, through the lens of the CLT (Lieberman and Trope, 1998).

The CLT (Lieberman and Trope, 1998; Trope and Liberman, 2003) suggests that perceived psychological distance, which refers to the perceived proximity of an event or object, influences mental representations of the same event or object. On the one hand, when the psychological distance from an event or object increases, individuals tend to conceptualize it as more abstract, schematic and having decontextualized features. This phenomenon is referred to as high-level construal (also referred to as abstract mindset). On the other hand, when the psychological distance from an event or object decreases, individuals tend to construe it as more concrete, detailed and having contextualized features. This is referred to as low-level construal (Trope *et al.*, 2007; also referred to as concrete mindset).

Social distance consists of one of the components of psychological distance in the CLT (Lieberman *et al.*, 2007). Studies have operationalized social distance into group categories such as close versus remote groups (Nan, 2007) to drive the relevancy of threat and make messages more personally relevant (Ahn, 2015; Amit *et al.*, 2009; Carrera *et al.*, 2014). The behavior performed by, or an outcome related to, a close group would be interpreted as a low-level construal compared to a distant group interpreted as a high-level construal. Therefore, the threat related to a close group could be interpreted as being more personally relevant due to its close social distance, thus evoking stronger fear that could influence attitudinal and behavioral outcomes. This study assesses whether the use of visual metaphors in threat appeals prompts young drivers' message processing through high or low construal and thus leads to higher threat appraisal and persuades them to avoid texting while driving.

Visual metaphors and the role of construal fit

Metaphor is a rhetorical style of comparing two dissimilar objects in which the meaning of one object is transferred to the other (Sopory and Dillard, 2002). Visual metaphors are a form of visual argumentation that juxtaposes two images, often without accompanying verbal explanations. Because visual metaphors do not explicitly state how two objects or concepts are analogically linked, they are more implicit and complex than verbal metaphors and allow for various possible interpretations (McQuarrie and Mick, 1996; Phillips, 2000). Research on visual metaphors has examined audiences' impressions of advertisements that use visual metaphors (Boozer *et al.*, 1991; Coulter *et al.*, 2001), the process whereby metaphors are interpreted (Proctor *et al.*, 2005), the moderating roles of metaphor types (e.g. abstract or concrete) and the individual differences (e.g. age and gender) in the way people interpret metaphors (Morgan and Reichert, 1999; Pawlowski *et al.*, 1998; Proctor *et al.*, 2005). Public health campaigns have used metaphors as a strategy to reach target audiences and proven a positive relationship with attention, comprehension, recall and behavior adaptation (Houts *et al.*, 2006; Palmer-Wackerly and Krieger, 2015). Yet, those studies only examined the effect of visual metaphor. Features that would influence individuals to engage in such effect, especially for the distracted driving context in social marketing practices, are less explored.

According to the CLT, a low-level construal (i.e. concrete mindset) is more specific and contains visualized features, whereas a high-level construal (i.e. abstract mindset) is more general and contains verbalized features (Lieberman and Trope, 1998). Studies have found that more direct and vivid features are associated with a low-level construal (Amrhein *et al.*, 2002). Thus, an individual within a low-level construal would perform message processing better when the threat is depicted through more direct, literal and concrete images, such as depicting a car collision caused by a texting driver. By contrast, a threat expressed as a metaphor would be more effective when an individual deals with the message in a high-level construal. For instance, showing a crushed box of glass and the chunks of debris strewn across the floor could juxtapose the danger of texting while driving, without any severe violent images. How individuals activate a high- or low-level construal is determined by how the message frames social distance. We anticipate that a message with a closer social distance would activate a low-level construal; this would be particularly effective when the visuals show the threat more concretely. By contrast, a message framed as socially distant would be more effective when the threat is visualized in a more abstract and metaphorical manner because it activates a high-level construal. Thus, the following hypotheses were formulated:

- H1.* When a message shows literal visual images of threat, in combination with proximal social entities, it will evoke (1) a higher perception of threat and (2) favorable behavioral intention.
- H2.* When a message shows metaphorical visual images of threat, in combination with distant social entities, it will evoke (1) a higher perception of threat and (2) favorable behavioral intention.

Study A

Participants and procedures

The first study aimed to explore whether a primed construal level through social distance would support the hypotheses. The study consisted of a 2×2 between-subjects, randomized experimental design that examines close versus distant social frames and metaphorical

versus literal visual rhetoric styles. Social distance was primed by having participants look at a fictitious Facebook post, while visual rhetoric style was primed by having them view two different PSA videos.

A total of 168 participants (61% male, mean age $M = 22.3$) were recruited from Amazon MTurk. Before the experiment began, participants were informed that the study was designed to examine the effectiveness of a PSA targeting young drivers. First, they were given consent forms containing the terms of participation and instructions. They were required to answer screening questions that asked if they had a driver's license, and they had to be between 18 and 24 years of age. They read a short paragraph that defined texting while driving. This procedure helped to standardize participants' understanding of texting while driving prior to viewing the stimulus materials.

After responding to the screening questions, the participants were assigned to one of four experimental conditions. First, they looked at a Facebook post designed to prime them to think about close social groups versus remote social groups. Then, they watched one of the advertisements that presented different visual depictions of threats. After examining the advertisements, the participants were asked to complete measures for the dependent variables and the specified classification variables, which included their reported levels of texting while driving. Each experiment lasted 15–20 min. Upon completion, participants were debriefed, thanked, and received US\$1 each from Amazon MTurk as compensation.

Measures

Perceived threat was assessed using three items modified from Witte (1992) on a seven-point Likert-type scale (Cronbach's $\alpha = 0.92$) with 1 = strongly disagree and 7 = strongly agree (e.g. "I believe that the consequences of accidents caused by texting while driving are severe"). We assessed the individual's intention to disengage from texting while driving, with Lee and Aaker's (2004) three-item *behavior intention* measurement (Cronbach's $\alpha = 0.94$) on a seven-point semantic differential scale (1 = very unlikely, 7 = very likely, improbable/probable and impossible/possible).

To test the efficacy of the manipulations, participants were asked to indicate how likely it is that the stimuli Facebook page (priming stimulus) and ad message from people close to their social distance made participants think about the threat of accidents that could occur. We measured three items of seven-point semantic differential scales (Cronbach's $\alpha = 0.89$): unfamiliar/familiar, not close/close, not connected/connected (Kent and Allen, 1994). The visual rhetoric style of threat (Chandran and Menon, 2004) was measured by two items on a seven-point scale anchored at concrete/abstract, literal/metaphorical (Cronbach's $\alpha = 0.83$).

Stimuli

Two Facebook posts and two online PSA videos were used to manipulate social distance and construal levels, respectively, in the assigned conditions. The study used a picture caption-style Facebook page showing a social marketing campaign against texting while driving as a priming material of social distance. We followed a previous study that used social distance framing in the message (Nan, 2007). The main copy in the picture of the newsfeed page stressed a close or a distant social distance by mentioning the victim of an accident due to a texting driver. The headline for the version focusing on proximal social distance read, "Texting while driving could kill *the one you love*," while the headline for the version focusing on distant social distance read "Texting while driving could kill *someone's* love." The headlines evoked the victim either at a close distance (a loved one) or at a far distance (someone else).

We followed the procedure of previous studies by using real PSAs from online video sharing sites to investigate the effect of threat appeals using visual rhetoric style (Huang *et al.*, 2013; Phelps *et al.*, 2004). The list of PSA videos used in the pretest was generated from YouTube. For the initial screening of viral video advertisements uploaded to YouTube, we applied search terms from previous studies such as “distracted driving,” “don’t text and drive,” “anti-texting campaign” and “texting while driving” (Cismaru *et al.*, 2010; Cismaru, 2014). We also added terms related to social marketing campaigns such as “public service announcement.”

We followed the criteria for choosing the appropriate online video from previous study (Tucker, 2014). After we selected ten video advertisements, 40 undergraduate students were recruited to view and rate the videos in random sequence. The students were instructed to respond to questions pertaining to their perceptions toward the video: whether the video’s visual style was either metaphorical or literal, whether they considered the video to be credible and how familiar the video was to them. Based on the mean scores from the pretest, two PSA video advertisements were selected for the main study. In one of them, the threat depiction was perceived to be concrete and literal ($M = 2.35$, $SD = 0.72$), while it was viewed as metaphorical in the other ($M = 5.98$, $SD = 0.83$, $t = 5.21$, $p < .001$). As a result, the stimuli video used in the main study featured either a metaphorical or a non-metaphorical depiction of a threat as depicted through video PSAs and a proximal or distant social distance primed through Facebook pages.

Study a result

Manipulation check. To test the efficacy of the manipulations, participants were asked to indicate how likely the Facebook page (priming stimulus) was to make them think about the threatful situations due to texting while driving for proximal social entities. The results supported the efficacy of the manipulation; a significant difference was found between the proximal condition and the distant condition of the Facebook page ($M_{\text{proximal}} = 2.35$, $SD = 0.72$ versus $M_{\text{distant}} = 5.98$, $SD = 0.83$, $t = 5.21$, $p < .001$). To measure the efficacy of the visual rhetoric style in the threat messages, participants were asked to indicate the extent to which the threat illustrated in the video was literal or metaphorical. The manipulation revealed a statistically significant difference ($M_{\text{literal}} = 5.51$ versus $M_{\text{metaphorical}} = 3.91$, $t = 2.52$, $p < 0.05$).

Hypothesis testing. We performed two-way analysis of variance (ANOVA) using SPSS version 25 and revealed significant main effects for social distance ($F(1,179) = 7.91$, $p < 0.01$), but no significant main effects for visual rhetoric style ($F(1,179) = 2.67$, $p = 0.10$) on perceived threat. Notably, the results indicated a significant two-way interaction between the social distance and visual rhetoric style of the messages regarding the perceived threat ($F(1,179) = 6.76$, $p < .01$, $\eta^2 = 0.04$). As predicted, for participants who viewed messages with proximal social entities, the level of threat perception remained similar between metaphorical or non-metaphorical visual styles ($M_{\text{literal}} = 6.36$, $SD_{\text{literal}} = 0.89$; $M_{\text{metaphorical}} = 6.21$, $SD_{\text{metaphorical}} = 1.06$). However, among participants who viewed messages with distant social entities, messages featuring metaphorical visuals of threat were associated with significantly higher perceptions of threat ($M_{\text{literal}} = 5.52$, $SD_{\text{literal}} = 1.15$; $M_{\text{metaphorical}} = 6.18$, $SD_{\text{metaphorical}} = 1.06$) (Table 1 and Figure 1).

A second ANOVA test was performed to examine the interaction effects of social distance and visual rhetoric style. There was no significant main effect for the visual rhetoric of the messages ($F(1,179) = 0.15$, $p = 0.9$) nor for social distance ($F(1,179) = 1.87$, $p = 0.17$). However, the interaction effect of social distance and construal level was statistically significant ($F(1,179) = 4.51$, $p < 0.05$, $\eta^2 = 0.03$). When participants were primed with

proximal social distance, the use of non-metaphorical visuals resulted in a higher degree of behavioral intention ($M_{\text{literal}} = 6.11, SD_{\text{literal}} = 1.11; M_{\text{metaphorical}} = 5.76, SD_{\text{metaphorical}} = 1.23$). For participants primed with distant social groups, the use of metaphorical visuals showed more favorable behavioral intention ($M_{\text{literal}} = 5.51, SD_{\text{literal}} = 1.12; M_{\text{metaphorical}} = 5.90, SD_{\text{metaphorical}} = 1.11$) (Figure 2).

Study B

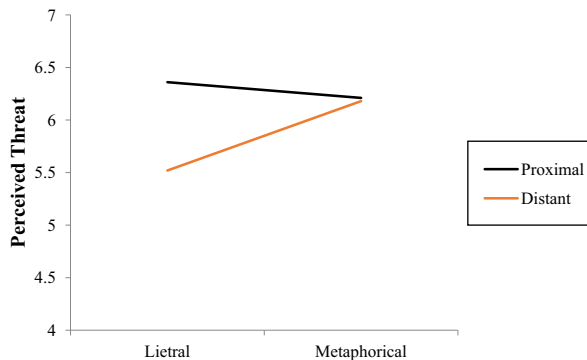
As expected, Study A found a construal fit that aligned with assumptions from the CLT: a match between social distance and visual rhetoric style (metaphorical versus literal) can result in significantly greater perceived threat and greater behavioral intention to stop texting while driving. The purpose of the second study was threefold. First, we explored the extent to which participants' threat appraisal influenced their subsequent adherence to the suggested behavior when viewing PSAs with construal fit (metaphorical images and distant social entities or literal images with close social entities) versus PSAs with unfit construal (metaphorical images and close social entities or literal images with distant social entities). In other words, we investigated perceived threat as a mediating variable between construal fit of the PSA and behavioral intention. Second, instead of using additional priming material, we manipulated social distance by framing the copy to increase the external validity of our work. We also used a print version of the PSA as the experimental stimulus rather than a video. Finally, answers to self-reported surveys can be subject to social

Table 1.
Summary of two-way ANOVA results (Study A)

Dependent variable	Visual rhetoric style		Factors	Two-way ANOVA	
	Literal	Metaphorical		F	η^2
<i>Perceived threat</i>					
Proximal	6.36 (0.89)	6.21 (1.06)	Visual rhetoric style	2.67	
Distant	5.52 (1.15)	6.18 (1.06)	Social distance	7.91**	
			Visual × Distance	6.76**	0.04
<i>Behavior intention</i>					
Proximal	6.11 (1.11)	5.76 (1.23)	Visual rhetoric style	0.15	
Distant	5.51 (1.12)	5.90 (1.11)	Social distance	1.87	
			Visual × Distance	4.51*	0.03

Notes: * $p < 0.05$, ** $p < 0.01$

Figure 1.
Interaction effects between social distance and visual rhetoric style on perceived threat



desirability bias, considering the context of social norm intervention. One possible method to overcome such limitation is by using scenario-based measures (Atchley *et al.*, 2012). This study modified a scenario described by Pliner and Cappell (1977) to investigate how participants rated the degree of responsibility of the texting driver in a car crash situation.

The conceptual model is similar to Study A. The intention to shift behavior will be favorable when there is a fit between the visual rhetoric (literal vs metaphorical) and social distance (proximal vs distant). This relationship would be mediated through a higher perception of threats in the message. The following hypotheses are suggested:

- H3a.* Participants in the PSA with construal fit (vs unfit) between social distance and visual rhetoric style will show favorable behavioral intention.
- H3b.* Participants in the PSA with construal fit (vs unfit) between social distance and visual rhetoric style will assign a high degree of responsibility to the texting driver in the scenario.
- H4.* Perceived threat will mediate such relationship in *H3*.

Participants and procedures

Like Study A, the second study involved a 2 (social distance frame: close vs distant) × 2 (visual rhetoric style: literal vs metaphorical) between-subjects, randomized experiment. Social distance framing was embedded in the headline of a fictitious print PSA advertisement, while the visual rhetoric style was conveyed through the image used.

A total of 166 participants (66.7% male, mean age $M = 22.8$) took part in the study through Amazon MTurk. All participants' age was between 18 and 24, and all had a driver's license. Before the experiment began, participants were informed that the study was designed to examine the effectiveness of a PSA targeting young drivers. Overall, the procedure was similar to the first study. Participants viewed one of the PSAs, which presented different visual depictions of threat and social distance. Afterward, the participants were asked to complete measures for the dependent variables. Each experiment lasted approximately 15–20 min. Upon completion, participants were debriefed, thanked and compensated.

Measures

For the survey scale, perceived threat and behavioral intention used the same items from Study 1. However, for the behavioral intention, we asked about participants' intention to use

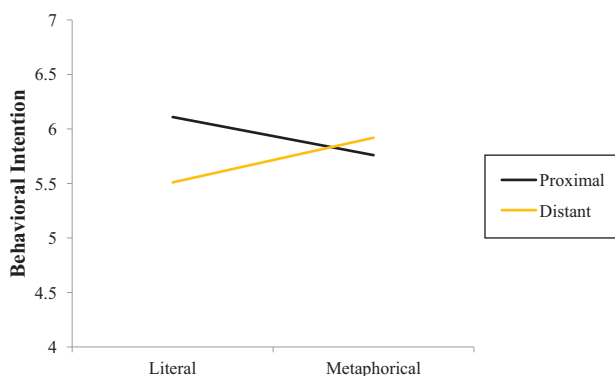


Figure 2.
Interaction effects
between social
distance and visual
rhetoric style on
behavior intention

a text blocking application while driving (Lee and Aaker, 2004; very unlikely/very likely, improbable/probable and impossible/possible). To assign punishments for engaging in unsafe driving in the scenario (Atchley *et al.*, 2012), participants were asked to rate, on a single item of a seven-point semantic differential scale (1 = not at all and 7 = definitely), how responsible the driver was for the crash.

Stimuli

A total of four print PSAs were used to present the study conditions. Proximal social distance framing was established by using the same headline (“A texting driver can kill someone you love”) as in Study A, while distant social distance framing was established using different copy (“Distracted driving can kill”). Both visual depiction styles (i.e. metaphorical and literal) used different imagery. The metaphorical version showed two cars on an image of a cellular phone touchscreen, which implied that using such a device could cause a vehicle collision. The literal version showed a driver lying on the street with her cellphone in her hand, which conveyed a severe crash due to cellphone use.

Study B results

Manipulation check. We conducted an independent samples *t*-test in SPSS 25 to assess the extent to which the threat in the stimuli was illustrated as metaphorical or literal. The manipulation check showed that participants perceived the PSA with a literal visual style ($M_{\text{literal}} = 5.18$, $SD = 1.40$) as a significantly more concrete depiction, compared to the PSA with a metaphorical visual style ($M_{\text{metaphorical}} = 3.27$, $SD = 1.41$, $t = 2.52$, $p < 0.05$). Participants were asked to indicate the closeness of the distance between themselves and the target of the car collision illustrated in the headline copy of stimuli PSA. The results supported the efficacy of the manipulation ($M_{\text{proximal}} = 5.71$, $SD = 1.08$; $M_{\text{distant}} = 3.13$, $SD = 1.10$, $t = 4.26$, $p < 0.01$).

Hypothesis testing. Hayes PROCESS Model 4 (2013) was used to conduct a mediation analysis using 5,000 bootstrap samples. To estimate an indirect effect, we first categorized participants into two groups (construal fit versus construal unfit), entered as the independent variable. The construal fit (coded as 1) encompassed participants who viewed a PSA with a metaphorical visual style and distant social distance or a PSA with a literal visual style with proximal social distance. The construal unfit (coded as 0) encompassed the two opposite groups: participants who viewed a PSA with a metaphorical visual style and proximal social distance or a PSA with a literal visual style and distant social distance. We used behavioral intention as the dependent variable and perceived threat as the mediator.

An independent samples *t*-test confirmed that participants in the construal fit condition ($M = 5.43$, $SD = 1.44$) perceived greater threat compared to those in the unfit construal condition ($M = 4.32$, $SD = 1.38$, $t(153) = -5.21$, $p < 0.001$). The 95% confidence interval (CI) did not include zero, indicating that construal fit had a significant indirect effect on behavioral intention through perceived threat ($B = 0.42$, $SE = 0.06$, 95% CI [0.2768, 0.5468]). In addition, the 95% CI did not include zero in the case of participants' perceived responsibility of the texting driver in the scenario ($B = 0.25$, $SE = 0.07$, 95% CI [0.1002, 0.3901]). This suggests participants who perceived more threats from the message assigned more responsibility in the case of the vehicle collision due to texting while driving, which supports *H3* and *H4* (Figure 3).

Overall, participants formed favorable behavioral intentions toward the PSA that used either the metaphorical visual depiction of threats with distant social entities or the literal visual depiction of threats with proximal social entities. Furthermore, perceived threats

The role of construal fit

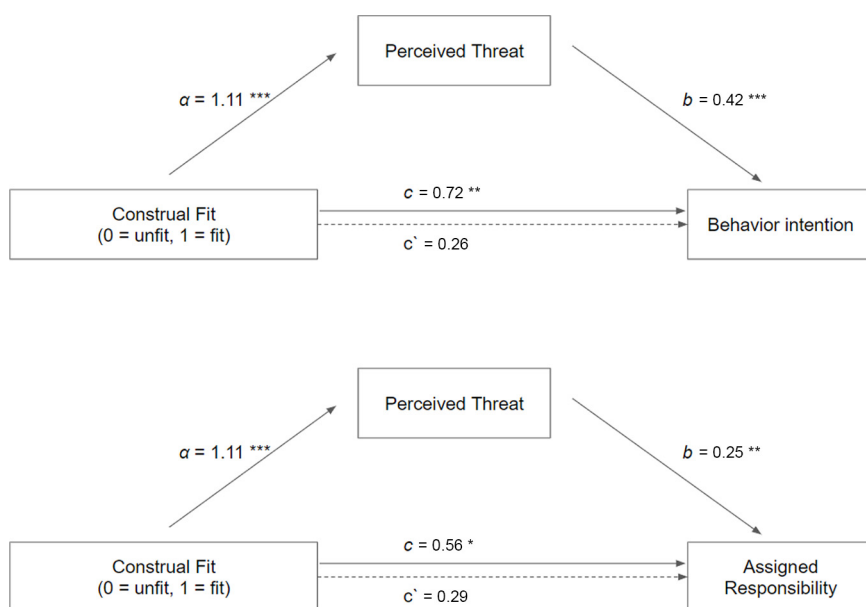


Figure 3. The effect of construal fit on behavior intention and assigned responsibility through perceived threat

Notes: Path coefficients are unstandardized; * $P < 0.05$, ** $p < 0.01$, *** $p < 0.001$

mediated the effect of construal fit on behavioral intention and higher responsibility of the driver using a cellphone in the crash scenario (Table 2).

Discussion

Texting while driving remains widespread among young adults, leading to serious threats and even including death. Social marketing campaigns have often used threat appeals to prevent young drivers from engaging in such dangerous behavior, but it has been reported that young adults doubt that the threats communicated in the messaging are relevant or would happen to them (Feldman *et al.*, 2011). Studies indicated that threat appeal campaigns might add further elements in their execution, such as evoking the presence of close social groups, to achieve the persuasion (Rozario *et al.*, 2010). In line with the CLT, the current study identified that a construal fit between visual rhetoric style and social distance framing could be more persuasive for promoting safe driving behaviors among young adults.

The first experiment confirmed that individuals who were primed for proximal social distance perceived a higher degree of threat when viewing PSAs that showed a concrete depiction of threatening outcomes. By contrast, those who saw a priming material about

	Construal fit		Construal unfit		<i>t</i> -test
	M	SD	M	SD	
Perceived threat	5.43	1.44	4.32	1.38	-5.21***

Note: *** $p < 0.001$

Table 2. Results of *t*-test comparing construal fit/unfit on perceived threat (Study B)

distant social groups perceived a higher threat when PSAs featured a metaphorical depiction of threat. The same pattern was found when we examined individuals' intention to engage in safe and responsible behavior by moving away from the cellphone when driving.

The second experiment replicated the first study with print images and confirmed the effect of construal fit between visual rhetoric style and social distance. Such fit could lead to more sophisticated persuasion: participants did not merely signal a future intention to avoid texting while driving, but they indicated a higher degree of intention to use a text blocking application and assigned more responsibility to the texting driver in an accident scenario. Such a change in attitude and behavioral intention was mediated through a higher perception of threat. Taken together, the results show that it is important to use a complementary visual strategy to maximize the effectiveness of threat appeals. Literal images should be paired with close social distance framing, while metaphorical images fit with distant social distance framing.

The study contributes to the extension of using threat appeals in social marketing. Most studies have limited investigation of the levels of threat strength on cognitive or emotional responses (perceived threat, perceived efficacy or evoked fear) and the relationship of message acceptance (De Pelsmacker *et al.*, 2011). The present study investigates other message elements – different visual rhetoric style and social distance of the message. The findings somewhat contradict previous studies which find that vivid visual cues better increase threat appraisal (Cauberghe *et al.*, 2009; Nabi *et al.*, 2008; Witter and Allen, 2000). By framing the message in varied social distances, choosing a metaphorical visual execution could also achieve the persuasion effect.

The study also provides an extension in applying the CLT in a social marketing context. According to the theory, psychological distance determines mental representations of events, which can have significant judgmental consequences on behavioral decision-making (Nan, 2007). Previous research has shown that people tend to describe events that occur for in-groups in more concrete terms (Trope and Liberman, 2010; Park and Morton, 2015); thus, they react more intensely to emotional appeals describing close social groups (Trope and Liberman, 2010; Septiano and Pratiwi, 2016). This study shows both in- and out-group could be equally impactful in processing messages through visual rhetoric style. The interaction between social distance framing and construal level can lead to the threshold of threat, and this perception of threat influences young adults' attitudinal and behavioral outcomes toward distracted driving. The evidence that construal fit moderates an individual's threat appraisal and subsequent behavioral decision implies that emotional appeals could show similar responses, regardless of the distance of social groups.

The results of the present study have practical implications for designers of road safety campaign strategies and messages. Although our findings show the salience of one's construal level in message processing, it is difficult to ask social practitioners to consider the target audience's predisposed construal levels prior to message exposure. Instead, they could tailor the message to a targeted group, which is somewhat homogenous (Awagu and Basil, 2016). Considering that young adults' levels of connection with significant peers are important predictors of engaging texting while driving (Berenbaum *et al.*, 2019), threatening them to change their behavior would be effective with a combination of both concrete visual cues and reminders of their families or friends. This implication could serve as a counter to the studies that have questioned the influence of social features (Gauld *et al.*, 2014). We recommend that threat appeals consider the inclusion of social distance entities when the goal is aimed to change young adults. However, when the message aims at the general population, using metaphorical images rather than showing car collisions and violence could be a more effective approach. Our findings suggest it is unnecessary to show graphic

images of violence and the severity of collision risk due to distracted driving. Intense threat appeals are often considered unethical (Hastings *et al.*, 2004) and may stimulate message avoidance. Making public service ads without a shocking visual could be a justification to keep the message ethical and acceptable.

Our finding implies the importance of the “upstream” approach in social marketing practice. Although our study focuses on the promotional part of the 4P marketing mix and message appeal tactics (common “downstream” approach), the second experiment revealed young adults had more intention to use a text blocking application while driving after viewing a PSA with a construal fit. The “upstream” approach emphasizes that individuals have access to socially desired behavior (Tapp and Spotswood, 2013). Practitioners and policymakers need to collaborate with other organizations to provide convenient methods to follow the recommended action.

Limitations and future discussions

The limitations of the current study open interesting opportunities for future study. A major limitation is that this study examined only the relativeness between the perceived threats due to the congruence of construal fit between visual rhetoric and social distance. Theoretical models, such as the extended parallel process model (Witte, 1992), suggest that individuals will disregard the message when they believe they cannot evade the threat (i.e. lack of efficacy; Witte, 1992). Therefore, it is important to examine the participants’ level of efficacy; however, the present study did not address this factor. In future research, it is necessary to examine how the combined effect of construal level and social distance framing can influence individuals’ perceived efficacy.

In addition, the current study did not investigate possible moderators tied to individual characteristics such as the participant’s driving confidence or level of cellphone dependence. These factors were mentioned as predictors of texting while driving intention among young drivers (Berenbaum *et al.*, 2019). Future research should confirm the impact of such considerations to obtain more accurate results. Another caveat is that we did not check for participants who had been engaged in traffic violations or penalty points of fine imposed on them. Although the size of this group may be relatively small to that of the overall population, future research should carefully screen participants in such a record of violation. The study results are also based on self-report, which may be subject to recall bias or social desirability bias. Future research may consider requesting participant consent to access alternative data sources, such as insurance records (Wickens *et al.*, 2020).

The sample used in the present study (MTurk workers) offers both strengths and limitations. On the one hand, MTurk workers are more likely to be recycled across studies, which concerns this group to be less naive (Hauser, Paolacci, and Chandler 2019). However, this study’s target demographic is relevant to young age and frequent internet users in Mturk, which may debunk the concern of representativeness. Finally, it is still advisable for future research to use a more diverse and more extensive sample to strengthen the present findings’ generalizability.

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About the authors

Dongjae (Jay) Lim (MA, University of Georgia) is a Doctoral candidate in the Department of Advertising and Public Relations at the Grady College of Journalism and Mass Communication, University of Georgia. His research examines consumers' persuasion knowledge usage on emerging persuasion tactics. He focuses on experimental and survey methods, examines topics in advertising literacy, public service announcements for sustainability goals and consumer psychology. He has published in scholarly journals, including *International Journal of Consumers Studies*, *Journal of Interactive Advertising*, *Australasian Journal of Marketing* and *Computers in Human behavior*.

Dongjae (Jay) Lim is the corresponding author and can be contacted at: jaylim0931@uga.edu

Jhih-Syuan Lin (PhD, University of Texas at Austin) is an Associate Professor of Advertising at National Chengchi University (Taipei, Taiwan). Her research focuses on advertising effects, digital and social communication strategies and consumer–brand relationships. She has published in leading scholarly journals, including *Journal of Broadcasting and Electronic Media*, *Cyberpsychology, Behavior, and Social Networking* and *International Journal of Advertising*. She is an active member of the American Academy of Advertising and serves on the Editorial Review Board of *International Journal of Advertising*, *Journal of Interactive Advertising*, and *Journal of Global Fashion Marketing*.

Un Chae Chung is a Doctoral student in the Institute of Communications Research at the University of Illinois Urbana-Champaign. His research focuses on understanding new innovations in advertising and their related impact on persuasion knowledge and psychological reactance.

Youngjee Ko is a Doctoral student in the Department of Advertising and Public Relations at the Grady College of Journalism and Mass Communication at the University of Georgia. Her research examines messages and persuasion effects in advertising and health campaigns. Her research focuses on how persuasive messages and strategies in social media influence individuals' attitudes and perceptions on advertising messages.