

Using Perspective Taking to De-Escalate Commitment to Software Product Launch Decisions

Completed Research Paper

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Abstract

In software product development settings when things go awry and the original plan loses credibility, managers often choose to honor the originally announced product launch schedule anyway, in effect launching a product that may be seriously compromised in terms of both functionality and reliability. In this study, we draw on the perspective of escalation of commitment to investigate adherence to original product launch schedules despite negative feedback. Specifically, we use the notion of perspective taking to propose a de-escalation tactic. Through a laboratory experiment, we found strong support that taking the perspective of individuals that can be negatively influenced by a product launch can indeed effectively promote de-escalation of commitment. Furthermore, we found that the experiences of anticipated guilt mediate the relationship between perspective taking and de-escalation, and this indirect effect is significantly greater when a decision maker's personal cost associated with de-escalation is high rather than low.

Keywords: De-escalation of commitment, software product launch, perspective taking, anticipated guilt

Introduction

On-time delivery is considered one of the key factors that determine the success of software projects (Cooke-Davies 2002). Further, software projects are often subject to significant time pressure, due to time-to-market considerations or contractually-bound deadlines. For example, tax-preparation software must be rolled out to the market prior to the tax-return season. Still, software projects are notorious for being late; the latest Standish group study suggests that nearly 75% of software projects exhibit schedule overruns (Standish Group 2013). In new software product development settings when things go awry and the original plan loses credibility, managers often choose to honor the originally announced product launch schedule anyway, in effect launching a product that may be seriously compromised in terms of both functionality and reliability. Such decisions, however, can lead to negative consequences. A recent example of this is HealthCare.Gov (the federal online health insurance marketplace), which was launched as scheduled on October 1, 2013, but immediately became an end user nightmare due to many technical problems. It was reported that prior to the launch the administration had been warned of insufficient testing, but they still decided to go ahead with the promised launch date (Somashekhar and Goldstein 2013).

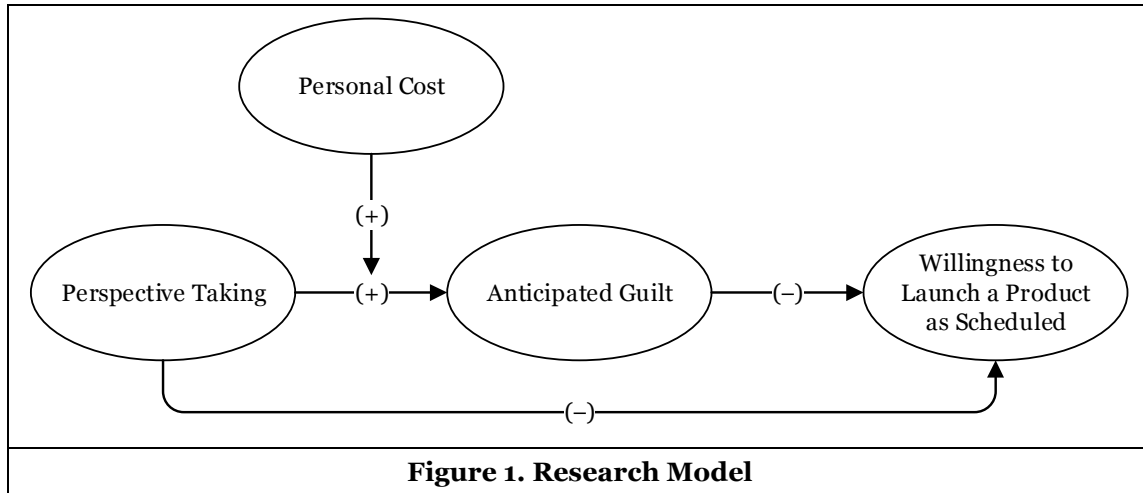
In this study, we draw on the perspective of escalation of commitment (Brockner 1992; Staw 1976; Staw 1981) to investigate adherence to original product launch schedules despite negative feedback. A handful of studies have shown that individuals can escalate their commitment to a new product development effort despite negative feedback regarding the viability of the product (Biyalogorsky et al. 2006; Boulding et al. 1997; Keil et al. 2007; Lee et al. 2014). To date, most prior escalation research has focused on identifying factors that promote escalation behavior. In contrast, there has been comparatively little research on how to reduce escalation once it occurs – i.e., de-escalation of commitment (Keil and Robey 1999).

To date, several de-escalation tactics have been proposed, and they tend to require rather radical changes (e.g., changes in top management or project championship (Keil 1995; Ross and Staw 1993)) or approaches that can clarify when an endeavor is not measuring up against thresholds that would constitute success (e.g., unambiguously negative feedback of project performance (Keil and Robey 1999)). While such tactics may be effective, they either require foresight and planning at the outset of an endeavor (e.g., establishing clear success criteria against which performance feedback can be evaluated) which may not always be practical, or they require that extraordinary (and often costly) measures be taken after escalation occurs (e.g., replacing top managers). Therefore, the objective of this study is to propose a more practical and less costly “psychological” tactic that can be used to help bring about de-escalation.

In this study, we use the notion of perspective taking to propose a de-escalation tactic. Perspective taking is a cognitive activity that involves adopting a viewpoint of others and attempting to understand a situation based on others’ preferences, values, and needs (Parker and Axtell 2001). Drawing on this notion of perspective taking, we suggest that seeing a decision to launch a troubled product from a different person’s perspective provides an opportunity for individuals to evaluate the launch decision from an alternative point of view, thus enabling de-escalation of commitment. Further, Batson et al. (1997a) found that taking the perspective of another person as opposed to oneself about a hypothetical event leads to different emotional consequences (e.g., empathy and distress). These changes in emotional state that are caused by perspective taking can eventually lead to changes in attitudes (e.g., more favorable attitude towards others (Batson et al. 1997b; Vescio et al. 2003)) or even behaviors (e.g., altruistic helping (Coke et al. 1978)). Based on this, we suggest that emotions must be considered in order to develop a more nuanced understanding of the relationship between perspective taking and de-escalation. Specifically, we focus on a particular type of emotion (anticipated guilt), and investigate its mediating effect on the relationship between perspective taking and de-escalation. Lastly, we also investigate a factor that can amplify the effect of perspective taking on anticipated guilt. Specifically, we suggest that associating a self-centered motivation with a de-escalation decision (e.g., when delaying a product launch may cost you personally) may strengthen the effect that perspective taking has on anticipated guilt.

In summary, the objectives of this study are to investigate: (1) the impact of perspective taking on de-escalation of commitment, (2) the mediating role of anticipated guilt on the relationship between perspective taking and de-escalation, and (3) the moderating role of personal cost on the relationship

between perspective taking and anticipated guilt. The remainder of the paper is organized as follows. First, we present a review of the literature on de-escalation of commitment, followed by the theoretical background for our study and the hypotheses we seek to test. Next, we discuss the experiment that was conducted to test these hypotheses, followed by the results that were obtained. We conclude the paper by discussing the implications for research and practice. Before we move to the next section, we present our research model (Figure 1).



De-escalation of Commitment

In this section, we discuss tactics that have been empirically shown to cause de-escalation of commitment. De-escalation of commitment is defined as “reduced commitment to a failing course of action” (Montealegre and Keil 2000, p. 418), and in the project management context it has been conceptualized as either redirecting or terminating troubled projects (Keil and Robey 1999; Montealegre and Keil 2000). Our review of the literature on de-escalation of commitment suggests that de-escalation tactics can be classified into seven categories (Table 1): namely, 1) actions that require radical changes after escalation occurs, 2) actions that must be taken before escalation occurs, 3) actions that must be taken at the organizational level, 4) actions that require certain information, 5) actions that require an external intervention, 6) actions that could be considered unethical, and 7) learning from experience. While useful, these tactics have certain limitations, such as requiring that extraordinary measures be taken after escalation occurs (category #1) or that certain precautions be taken before escalation occurs (category #2). Further, some actions require intra or inter-organizational interventions that may not always be practical (categories 3, 4, and 5), or forms of scapegoating that could be considered unethical (category #6). Lastly, some require prior experience with escalation of commitment (category #7).

Table 1. Categories of De-Escalation Tactics

Category	Tactic	Description	References
1. Actions that require radical changes after escalation occurs	Changes in top management	Changes in top management, such as project champion reduces commitment to a troubled project, thus facilitating de-escalation of commitment.	Keil (1995); Ross and Staw (1993)
	Replacing decision maker who initiated a course of action	Replacing the person who initiated a course of action (e.g., project manager) by a new person can reduce personal responsibility associated with a failing course of an action, thus limiting escalation of commitment.	Barton et al. (1989); Boulding et al. (1997); Keil and Robey (1999)

Table 1. Categories of De-Escalation Tactics (Continued)			
Category	Tactic	Description	References
2. Actions that must be taken before escalation occurs	Setting decision rules/target levels for stopping a project	Establishing decision rules or target levels that determine project success or failure can be used as a basis for stopping a troubled project.	Boulding et al. (1997); Simonson and Staw (1992)
	Setting and announcing a resource limit	Setting and publicly announcing a resource limit makes people reluctant to go over the limit, thus facilitating de-escalation of commitment.	Brockner et al. (1979); Heath (1995); Keil and Robey (1999); Simonson and Staw (1992)
	Regular evaluations of projects	Regular evaluations of projects can help to surface problems, thus helping to prevent escalation of commitment.	Drummond (1995); Drummond (1996); Keil and Robey (1999)
3. Actions that must be taken at the organizational level	Creating a culture that tolerates failure	Creating a culture that tolerates failure makes it bearable to abandon troubled projects.	Heng et al. (2003); Simonson and Staw (1992)
	De-institutionalizing the project	Removing a troubled project from the “core of the firm” (e.g., emphasizing the peripheral nature of the project or physically moving the project to a different location) can promote de-escalation of commitment.	Montealegre and Keil (2000); Ross and Staw (1993)
	Reducing the threat of negative outcomes	Reducing the threat of negative outcomes (e.g., punishment for project failure) can promote de-escalation.	Keil and Robey (1999); Simonson and Staw (1992)
	Redefining a troubled project	Redefining a troubled project can help to shift the organization’s framing of the problem, thus highlighting alternative courses of action and thereby helping to bring about de-escalation.	Keil et al. (1995); Keil and Robey (1999); McCain (1986); Northcraft and Neale (1986); Montealegre and Keil (2000); Pan et al. (2004)
4. Actions that require certain information	Reducing the ambiguity of negative feedback	Unambiguous negative feedback about troubled project can make problems more salient, thus causing de-escalation of commitment.	Garland et al. (1990); Keil and Robey (1999);
	Increasing the visibility of project costs	Cost information about the troubled project may not be clear or may be concealed within organizations. However when the cost information of the troubled project is made more visible and salient, this may lead decision makers to de-escalate.	Brockner et al. (1979); Montealegre and Keil (2000)
5. Actions that require an external intervention	Making appeals to external stakeholders	De-escalation can be promoted by external stakeholders who can “make the economics of withdrawal more favorable.”	Montealegre and Keil (2000); Ross and Staw (1993)
	External pressures	External pressures can trigger a reassessment of a project, thus causing de-escalation of commitment.	Keil (1995); Montealegre and Keil (2000); Ross and Staw (1993)
6. Actions that could be considered unethical	Blaming others	Decision makers may shift blame to others, making it easier for them to terminate a troubled project without losing face.	Montealegre and Keil (2000)
7. Learning from experience	Having experienced or imagined an escalation situation	Having experienced or imagined an escalation situation induces regret about the previous escalation situation, thus limiting future escalation of commitment.	Ku (2008)

Overall, our review of the literature on de-escalation suggests the need for a less costly and more practical tactic for inducing de-escalation. Thus, we suggest that a simple “psychological” tactic (perspective taking) can be an inexpensive and practical approach to induce de-escalation of commitment to product launch decisions. In the next section, we discuss the theoretical background behind perspective taking, followed by our theorizing for how it may induce de-escalation of commitment.

Theoretical Background and Hypotheses

The Effect of Perspective Taking on De-Escalation of Commitment

The notion of perspective taking originated in the 70’s in the psychology literature (Chandler 1973; Mossler et al. 1976). Perspective taking is centered on a psychological connection that can be made between self and others; in other words, perspective taking is known to weaken the self-other boundary and psychologically merges the self and other (Davis et al. 1996). Hence, perspective taking allows people to adopt the thinking, and feelings of others, which in turn can lead people to behave in a way that others might behave (Galinsky et al. 2008).

Perspective taking is known to have many benefits across a variety of contexts, including developing cognitive abilities of children (Piaget and Inhelder 1969), inducing altruistic behavior (Batson 1991; Underwood and Moore 1982), improving employees’ performance (Parker and Axtell 2001), designing electronic communication systems for knowledge intensive firms (Boland and Tenkasi 1995), promoting organizational citizenship behavior (Kamdar et al. 2006), helping price negotiation (Galinsky and Mussweiler 2001), and improving creativity at work (Grant and Berry 2011).

To date, there has been only one study that has investigated perspective taking in an escalation context. In an experiment, Gunia et al. (2009) found that when individuals were asked to take the perspective of a person who initiated a course of action, they became more willing to continue the same course of action despite negative feedback. In explaining their findings, Gunia et al. (2009) suggested that when a second individual takes the perspective of the person who first initiated a course of action, s/he feels “psychologically connected” and “may become vicariously motivated to justify the actions of the first.” (p. 1238). This interpretation is based on studies that investigated personal responsibility in escalation situations, and found that people who are responsible for initiating a course of action feel a need to justify their prior decision to embark on a course of action (Staw 1976).

One essential aspect of perspective taking involves the target (i.e., whose perspective is invoked). For instance, in the experiment by Gunia et al. (2009) the target was an individual who initiated a failing course of action. Galinsky et al. (2008) found that different targets of perspective taking lead to different results. Specifically, Galinsky et al. (2008) found that individuals who took the perspective of a professor exhibited better performance on an analytic task as compared to individuals who took the perspective of a cheerleader. In the context of product launch decisions, we suggest that de-escalation of commitment can be promoted by taking the perspective of individuals who may be negatively affected by a premature product launch decision. More specifically, when a software product has defects (i.e., bugs) and is prematurely launched, users may be negatively affected by the software product. Taking the perspective of these users would help decision makers to better understand how users might get affected by negative outcomes, thus promoting de-escalation of commitment to product launch decisions. Thus, we propose the following hypothesis:

H1: Decision makers’ commitment to launching a product as scheduled will be reduced by taking the perspective of individuals who may be negatively affected by the prematurely launched product.

Prior research on perspective taking has shown that perspective taking has influences on the emotional experiences of individuals (Batson 1991; Parker et al. 2008). What drives such emotional experiences is a psychological connection between an individual and a perspective target, and through this psychological connection the individual is able to better understand an emotional state that the target individual might experience. Ultimately, such an improved understanding of the emotional state of others tends to lead to changes in attitudes (Batson et al. 1997b; Vescio et al. 2003) or behaviors (Coke et al. 1978). For instance, Coke et al. (1978) found in an experiment that an emphatic emotion caused by perspective taking (in this case, taking the perspective of a student who lost her parents in a car accident) led subjects to become

willing to volunteer a greater amount of their time (in order to help the student). In this study, we draw on this two-step process caused by perspective taking (perspective taking -> a change in the emotional state -> a change in the attitude or behavioral intention) to theorize how perspective taking causes a change in anticipated guilt, and subsequently causes de-escalation of commitment. In what follows, we theorize this mediation relationship.

Anticipated Guilt

Guilt is known as an unpleasant emotion (Baumeister et al. 1994; Lindsey 2005), and individuals tend to feel guilty when their actions cause harm to others, or violate justice (Grant and Wrzesniewski 2010; Tangney and Dearing 2004). Anticipated guilt is a “prevention-focused” emotion (Grant and Wrzesniewski 2010, p. 110), because it involves concerns about experiencing guilt over future events (Baumeister et al. 2007; Lindsey 2005). In this study, we suggest that by taking the perspective of individuals who may be negatively affected by a product launch, decision makers will experience greater feelings of anticipated guilt about potential harm that can be caused to individuals. Thus, we propose the following hypothesis:

H2: Decision makers’ anticipated guilt about potential harm that may be caused by a prematurely launched product will be increased by taking the perspective of individuals who may be negatively affected by the product.

Furthermore, prior research has found that anticipated guilt can result in behavioral change (Grant and Wrzesniewski 2010; Lindsey 2005). For instance, it has been found that anticipated guilt regarding how people may suffer and die from leukemia when help is not provided promotes bone marrow donations (Lindsey 2005; Lindsey et al. 2007). This demonstrates that behavioral changes can arise in response to anticipated guilt. This suggests that a decision maker’s anticipated guilt about the potential harm that could be caused to product users as a result of launching a product prematurely could influence their behavior. Thus, we propose the following hypothesis:

H3: Decision makers’ anticipated guilt about potential harm that may be caused by a prematurely launched product will reduce their commitment to launching the product as scheduled.

Personal Cost

A handful of prior studies have found that selfish or self-centered decisions generate a greater feeling of guilt (Chang et al. 2011; Ketelaar and Tung Au 2003). Such decisions can often reduce someone else’s welfare as a consequence of increasing one’s own welfare. Ketelaar and Au (2003), for example, conducted an experiment (using a repeated ultimatum game) and found that participants experienced greater guilt when they increased their benefit at the expense of another person’s benefit.

Based on these findings, we suggest that associating a self-centered motivation with a premature product launch decision (e.g., when delaying a product launch may cost you personally) will generate a greater feeling of anticipated guilt for the decision maker when they take the perspective of individuals who may be negatively affected by the product. Specifically, we theorize that when the personal cost of de-escalating is high for the decision maker, perspective taking will lead him/her to experience greater feelings of anticipated guilt compared to when the personal cost of de-escalating is low. When the personal cost of delaying a product launch is high for the decision maker, s/he is apt to experience more anticipated guilt because any harm that should arise to an individual from having launched the product as scheduled will serve to underscore the fact that one’s own welfare was advanced by sacrificing another individual’s welfare. Thus we expect that taking the perspective of the individual who may be harmed in such situations will lead the decision maker to experience greater feelings of anticipated guilt. Conversely, when the decision maker’s personal cost of de-escalating is low, s/he will experience less anticipated guilt about the consequences associated with launching the product as scheduled. Should harm arise to an individual in this instance, it would not be due to advancing one’s own welfare at the expense of others. Thus, we state the following hypothesis:

H4: Decision makers' personal cost associated with delaying a premature software product launch moderates the relationship between perspective taking and anticipated guilt, such that the effect of perspective taking is stronger when there is greater personal cost associated with delaying a premature software product launch.

Hypotheses 2 & 3 suggest a mediating relationship between perspective taking and de-escalation of commitment, while Hypothesis 4 suggests a moderating effect of personal cost on the relationship between perspective taking and de-escalation of commitment. These relationships together suggest a moderated-mediation relationship in that the mediating effect of anticipated guilt is moderated by the decision maker's personal cost associated with delaying a premature software product launch (i.e., de-escalation of commitment). Thus, we propose the following hypothesis:

H5: Decision makers' personal cost associated with delaying a premature software product launch will moderate the extent to which anticipated guilt mediates the indirect effect of perspective taking on de-escalation. More specifically, the indirect effect of anticipated guilt will be greater when the decision maker's personal cost associated with delaying a premature software product launch is high rather than low.

Method

In order to test our hypotheses, we conducted a laboratory experiment using a scenario-based approach. We chose this method because we wanted to create a highly controlled setting that would allow us to examine the proposed causal relationships between perspective taking and de-escalation, thus achieving high internal validity (Cook and Campbell 1979). Laboratory experiments have been widely used in prior escalation (e.g., Keil et al. (2000b), Wong and Kwong (2007), Staw (1976)) and de-escalation studies (e.g., Boulding et al. (1997), Garland et al. (1990), Simonson and Staw (1992)), as well as in perspective taking studies (e.g., Galinsky et al. (2008)).

Experimental Design and Participants

Our experiment involved a 2 x 2 factorial design in which perspective taking and personal cost were manipulated independently. Participants were randomly assigned to one of four experimental conditions. In each condition, the experiment was conducted in two phases. Participants were instructed to read a scenario in which they were asked to play the role of new product development director at a software company, and to answer a series of questions. Prior to the actual experiment, we conducted several rounds of pilot tests to: (1) refine the scenario, (2) refine the manipulations of perspective taking and personal cost, and (3) validate the measures included in the experiment.

A total of 179 undergraduate students enrolled in upper-level information systems courses (junior and senior levels) at a large urban university in the southeastern U.S. participated in the experiment. Due to missing responses, we dropped eight participants, retaining 171 participants for subsequent analysis. The average age of the participants was 26.2 years, and the average years of work experience was 7.3 years. Seventy-six percent of the participants were male (n = 130) and 24% were female (n = 41).

Decision Task and Measures

Our experiment involved two phases. In Phase 1, we introduced an escalation scenario that involved whether or not to launch a software project as scheduled despite negative feedback. This type of product launch decision scenario has been used before in escalation research (Keil et al. 2007). In our scenario, participants were told that for the past year they had been responsible for developing a specialized software program that controls the intensity and targeting of an external radiation beam for treating cancer tumors. They were told that the product is scheduled to be launched next week, but just today a critical software defect was discovered that could under extremely rare circumstances result in increased doses of radiation. Participants were further informed that the CEO of the company had told them to ignore the defect completely and ordered them to launch the product as scheduled. After reading the scenario, participants were asked to respond to questions concerning anticipated guilt and their willingness to launch the product as scheduled (escalation). Measures for anticipated guilt were adapted from Lindsey (2005) and escalation measures were adapted from Keil et al. (2000b) and Lee et al. (2012).

In Phase 2, we introduced the manipulations of perspective taking and personal cost. Specifically, the manipulation of perspective taking was informed by Hoever et al. (2012). Participants in the perspective taking group were asked to put themselves in the shoes of someone whose mother may suffer from radiation sickness caused by the software bug, whereas participants in the non-perspective taking group did not receive this instruction. As for the manipulation of personal cost, participants in the high cost group were told that employees who disobeyed the CEO were scolded and denied promotions (a high personal cost associated with de-escalation), whereas participants in the low cost group were informed that the CEO was tolerant towards disobedience and employees still received expected promotions (a low personal cost associated with de-escalation). Following the manipulations, participants were asked to respond to the same sets of questions used in Phase 1 concerning anticipated guilt and their willingness to launch the product as scheduled. Further, participants were asked to answer four manipulation check questions; two for the perspective taking manipulation and two for the personal cost manipulation. Participants in the non-perspective taking groups did not receive the manipulation check for perspective taking, as they did not receive the perspective taking manipulation. Lastly, participants were asked to answer some demographic questions relating to age, gender, and work experience. The actual scenario is shown in Appendix A and a complete list of measures is shown in Appendix B. All measures were based on seven-point Likert-type scales.

Overall, our experimental scenario was consistent with typical escalation situations in which individuals embark on a course of action, at a later point in time receive negative feedback concerning the previously chosen course of action, and then must decide whether or not to continue the same course of action (Brockner 1992).

Results

Manipulation Checks and Descriptive Statistics

In order to assess whether or not the manipulations were effective, we first created a composite variable for the two perspective taking manipulation checks, and another composite variable for the two personal cost manipulation checks. Next, we examined the mean value of the perspective taking group, which was 5.20 on a 7-point scale ($n = 97$, $M = 5.20$, $SD = 1.46$). This indicated that the perspective taking manipulation was effective. Furthermore, the results of a one-way ANOVA indicated that the mean difference between the high cost group ($n = 80$, $M = 5.75$, $SD = 1.15$) and low cost group ($n = 91$, $M = 3.86$, $SD = 1.58$) was statistically significant, and in the expected direction ($F(1, 169) = 78.20$, $p < .001$).

Next, we created change scores using Phase 1 and Phase 2 measures. Specifically, we created a change score for each of the anticipated guilt and willingness to launch measures by subtracting Phase 1 responses from Phase 2 responses. We chose this change-score approach in order to examine the changes caused by perspective taking in anticipated guilt and willingness to launch. Further, change-scores are frequently used in research that involves a pre-test/post-test experimental design (e.g., assessing the weight loss by measuring a change in weight before and after a workout session) such as ours (e.g., assessing de-escalation of commitment by measuring a change in the escalation behavior before and after perspective taking) in medical research (e.g., Powers et al. (2013)) and business research (e.g., Wowak et al. (2011)). While using a change score is sometimes criticized for such issues as low reliability and ambiguity of interpretation (Klein et al. 2009), such criticisms are largely against “models that utilize a match between two variables” (Klein et al. 2009) (i.e., taking a difference score between two-matched variables), whereas our experiment involved repeated-measures (i.e., measuring a change in one variable between Phase 1 and Phase 2) in a pre-test/post-test experimental design. Further, our change scores showed acceptable reliability (see Table 2), and our theorizing was centered on changes in anticipated guilt (H2) and willingness to launch (H3) caused by perspective taking as opposed to a match between two different variables.¹

¹To further validate our measurement model, we evaluated it using SmartPLS (Ringle et al. 2005). The results suggested that all of the item loadings were above the suggested threshold of 0.707 (Chin 1998) with their respective latent variables, while below 0.29 for other latent variables. The average variance extracted (AVE) for all latent variables were above 0.5, and exceeded squared correlation coefficients with other variables. Overall, these results provided a strong support for our measurement model and strong convergent/discriminant validity.

Lastly, we examined the correlation among variables included in the experiment (Table 2). Significant correlations were found between variables that were theorized to have relationships.

Variable		Mean	SD	Cronbach's α	1	2	3	4
1	Willingness to Launch	-.471	1.281	.848	-			
2	Perspective Taking ²	-	-	-	-.230**	-		
3	Personal Cost ²	-	-	-	.231**	-.056	-	
4	Anticipated Guilt	.419	.942	.765	-.304**	.197**	-.111	-

1. *: $p < .05$, **: $p < .01$, ***: $p < .001$

2. Experimentally manipulated between-subject variables

Testing of Hypotheses

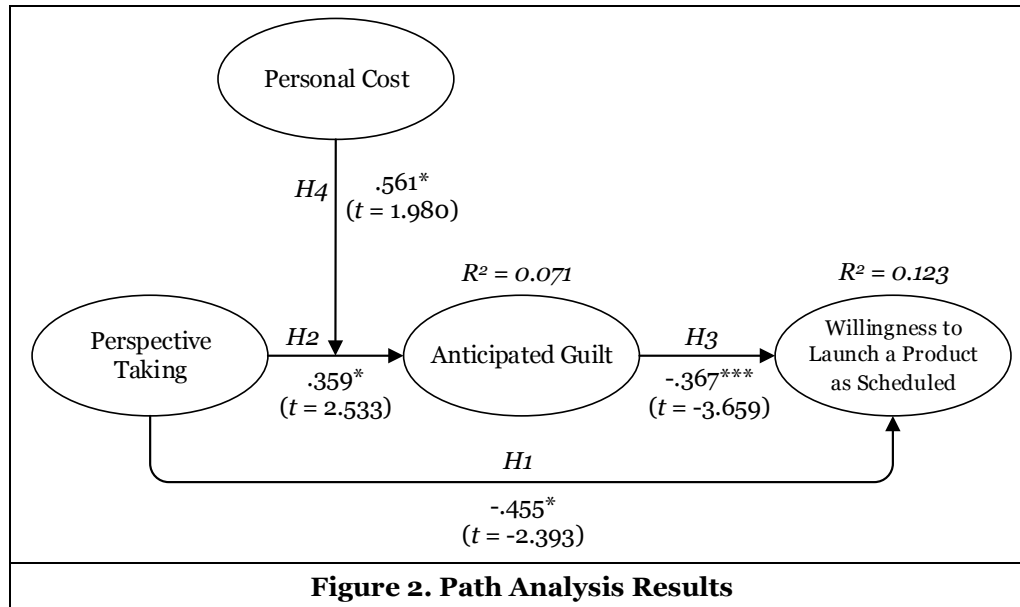
In order to test our hypotheses, we used Hayes' (2013b) PROCESS macro for SPSS. Similar to the path analysis framework suggested by Edwards and Lambert (2007), the PROCESS macro provides capabilities to test models that consist of moderation and mediation through bootstrapping (Hayes 2013b). We configured our model based on Model 7 in Hayes (Hayes 2013b) which allows testing models that contain moderated mediation (i.e., the first stage moderation model (Edwards and Lambert 2007; Hayes 2013a)). This approach allowed us to test all five hypotheses simultaneously. Our analysis was conducted based on a 5,000 resample bootstrapping.²

First, we examined the main effects of perspective taking on willingness to launch (H1) and anticipated guilt (H2). The results indicated that perspective taking had a significant negative effect on willingness to launch ($\beta = -.455$, $t = -2.393$, $p < .05$), and a significant positive effect on anticipated guilt ($\beta = .359$, $t = 2.533$, $p < .05$) (see Table 3 and Figure 2). Further, the results indicated that anticipated guilt had a significant negative effect on willingness to launch ($\beta = -.367$, $t = -3.659$, $p < .001$) (H3). The results also indicated that personal cost had a significant moderating effect on the relationship between perspective taking and anticipated guilt ($\beta = .561$, $t = 1.980$, $p < .05$), suggesting that a high personal cost strengthened the relationship between perspective taking and anticipated guilt (H4). These results provided support for Hypotheses 1-4. We also evaluated the R^2 values of anticipated guilt ($R^2 = .071$, $F(3, 167) = 4.229$, $p < .01$) and willingness to continue product launch ($R^2 = .123$, $F(2, 168) = 11.740$, $p < .001$), and both were significant, indicating that the model explained 7% of the variance in anticipated guilt and 12% of the variance in willingness to launch.

	Anticipated Guilt		Willingness to Continue Product Launch	
	Coefficient ¹	t -value	Coefficient	t -value
Perspective Taking	.359*	2.533	-.455*	-2.393
Anticipated Guilt	-	-	-.367***	-3.659
Personal Cost	-.186	-1.323	-	-
Perspective Taking x Personal Cost	.561*	1.980	-	-
	$R^2 = .071$ $F(3, 167) = 4.229$, $p < .01$		$R^2 = .123$ $F(2, 168) = 11.740$, $p < .001$	

1. *: $p < .05$, **: $p < .01$, ***: $p < .001$

² Demographic variables (age, gender, and work experience) were not included in the final analysis, as they were not found to have any significant effects on our dependent variables (anticipated guilt and willingness to launch).



Next, we proceeded to test H5, which involved moderated mediation. We examined the index of conditional indirect effects provided by the PROCESS macro through bootstrapping (Hayes 2013a). This index provides a direct test of whether the indirect effect is significantly different between two groups when the moderator is dichotomous (Hayes 2013a). The index was statistically significant since the bias-corrected 95% confidence interval (BCCI) for the index did not include zero ($index = -.206$, $SE = .127$, Lower-level BCCI = $-.537$, Upper-level BCCI = $-.021$); thus, indicating that the indirect effect was significantly different between the two groups (i.e., high personal cost vs. low personal cost) (Table 4). Specifically, the indirect effect of perspective taking on willingness to launch was significant when the personal cost associated with de-escalation was high, whereas the indirect effect of perspective taking on willingness to launch was not found to be significant when the personal cost associated with de-escalation was low.

Perspective Taking		Effect	SE	Lower-level BCCI ¹	Upper-level BCCI ¹
Direct Effect		-.455	.190	-.830	-.080
Conditional Indirect Effects	High Personal Cost	-.241	.098	-.481	-.087
	Low Personal Cost	-.035	.074	-.178	.119

1. Bias-controlled 95% confidence interval

General Discussion

In this study, we suggested the need for a “psychological” tactic that can be used to help induce de-escalation of commitment in the context of product launch decisions. By drawing on the notion of perspective taking, we suggested that taking the perspective of individuals who may be negatively affected by a software product launch can reduce a decision maker’s commitment to launch a product as scheduled. Further, we theorized that the effect of perspective taking on de-escalation is mediated by anticipated guilt. Lastly, we suggested that personal cost has a positive effect on the relationship between perspective taking and anticipated guilt, and moderates the indirect effect of anticipated guilt on the relationship between perspective taking and de-escalation. Using a highly controlled setting created by a laboratory experiment, we obtained strong empirical evidence for the hypothesized relationships.

Theoretical Implications

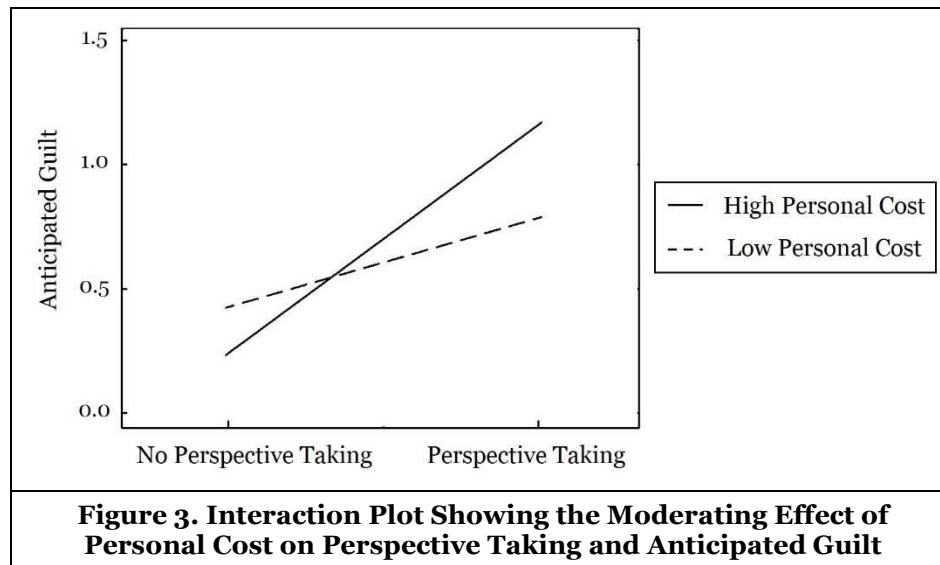
Our study makes several meaningful contributions to both de-escalation and perspective taking research. First, this study suggests a practical and inexpensive tactic that can be used to induce de-escalation of commitment in product launch decision settings. Specifically, the findings of this study show that decision makers' commitment to a failing course of action can be reduced by simply telling them to put themselves in the shoes of someone else. This is an extremely simple tactic, compared to some other tactics reported in the de-escalation literature (e.g., replacing top-management (Keil 1995; Ross and Staw 1993)). Further, this study underscores the importance of identifying the right perspective taking target to induce de-escalation of commitment. Specifically, Gunia et al. (2009) found that taking the perspective of the initial decision maker (responsible for negative outcomes) can lead a subsequent decision maker to escalate commitment to a failing course of action, presumably for self-justification reasons. In contrast, this study shows that escalation of commitment can be reduced when the perspective taking target involves an individual who may be negatively influenced by an escalation decision.

Second, this study contributes to the de-escalation literature by identifying an emotion construct that can induce de-escalation of commitment. In recent years, escalation researchers have begun to focus on the role of emotions in promoting escalation (e.g., anticipated regret (Wong and Kwong 2007) and negative affect (Wong et al. 2006)), or limiting escalation (e.g., regret (Ku 2008)). In this study, we showed that anticipated guilt about potential negative outcomes for other individuals can induce de-escalation of commitment.

This study also makes meaningful contributions to the literature on perspective taking. Prior research on perspective taking has shown that perspective taking causes changes in peoples' emotional state, which subsequently leads to changes in attitudes (Batson et al. 1997b; Vescio et al. 2003) or behaviors (Coke et al. 1978). This study provides fresh empirical support for this two-step process in an escalation context. Specifically, our findings show that perspective taking leads to a change in anticipated guilt, which subsequently leads to a reduction in escalation of commitment; in other words, the effect of perspective taking on de-escalation is mediated by anticipated guilt.

Further, this study contributes to the literature on perspective taking by showing that individuals can experience anticipated guilt when taking the perspective of others. While prior research on perspective taking has shown that perspective taking influences individuals' emotional experiences (Parker et al. 2008), they have focused on a limited set of emotions such as sympathy (e.g., Batson et al. (1989), Davis (1996), Vaish et al. (2009)). Our study suggests that perspective taking can cause a change in a negative and future-oriented emotion (i.e., anticipated guilt).

Lastly, we contribute to the literature on perspective taking and de-escalation by identifying decision makers' personal cost associated with de-escalation as an important factor that enhances the effect of perspective taking on anticipated guilt. Figure 3 illustrates the interaction between personal cost and perspective taking that we observed in our experiment. Our findings show that perspective taking has a stronger effect on anticipated guilt when the personal cost associated with de-escalation is high versus when it is low. In other words, decision makers who take the perspective of others will experience a greater feeling of anticipated guilt when the personal cost associated with de-escalation is greater. Further, this study provides empirical evidence that the indirect effect of anticipated guilt on the relationship between perspective taking and de-escalation is moderated by personal cost. The indirect effect of perspective taking through anticipated guilt was found to be significant when the personal cost associated with de-escalation was high, but there was no significant indirect effect when personal cost was low.



Practical Implications

Many organizations face the challenge of escalation of commitment in IT projects (Keil et al. 2000a). To date, prior de-escalation studies have focused on identifying tactics that can be used to terminate, or redirect troubled projects. In contrast, little is known about how to reduce escalation of commitment in the context of product launch decisions. In new software product development settings decision makers often choose to prematurely launch a product as scheduled despite negative consequences that can result from it. Indeed, such software product launch decisions can lead to a nightmare situation for users, and can also cause lead to significant business losses. A classic example of this is Hershey's which launched an EPR system to meet the schedule for the Halloween season in 1999, but technical glitches with the system prevented the company from fulfilling \$100 million worth of orders (Flyvbjerg and Budzier 2011). Against this backdrop, this study suggests a simple psychological tactic that can be employed to potentially persuade decision makers to de-escalate their commitment to launching a product as scheduled. We believe that this perspective taking tactic can be used more universally, compared to some other de-escalation tactics that require a great amount of effort, or can cause a significant disruption within an organization (e.g., replacing top-management (Keil 1995; Ross and Staw 1993)).

In addition, the findings of this study suggest that managers should recognize how anticipated guilt can be used in a positive way. Although the experiences of negative emotions in the workplace are generally to be avoided due to their adverse impact on attitude, behavior, and performance (Ashkanasy and Daus 2002), anticipated guilt could also be viewed in a positive light as it can help reduce undesirable behaviors (Grant and Wrzesniewski 2010). In our study, we showed that anticipated guilt can reduce escalation of commitment. Another powerful aspect of anticipated guilt is that it is anticipatory – meaning that the negative outcomes that induce guilt can be imaginary. When providing advice to decision makers who are trapped in an escalation situation, managers (or colleagues) can promote de-escalation by having them imagine a situation (for example through perspective taking) that can arouse feelings of guilt.

Furthermore, we showed that associating a high personal cost with de-escalation can further enhance the feelings of anticipate guilt. This suggests that although managers might prefer to associate a low personal cost with de-escalation so that de-escalating commitment to a failing course of action can be inexpensive for employees, our study suggests that associating a high cost with de-escalation can induce greater anticipated guilt through perspective taking, thus strengthening the practical impact of perspective taking on de-escalation.

Limitations and Directions for Future Research

Like any other research, this study is not without limitations. The first limitation relates to type of experimental approach used in this study. To investigate the relationship between perspective taking and de-escalation, we conducted a scenario-based laboratory experiment which is a conventional approach in many studies investigating escalation and de-escalation of commitment (e.g., Conlon and Garland (1993), Boulding et al. (1997), Wong and Kwong (2007)). Although this approach limits our capability to capture all of the complex dynamics in escalation situations, it allows us to test and extend theory by examining the causal relationships in our model with “precision and control” (Dennis and Valacich 2001, p. 17). Hence, we believe that this study contributes meaningful insights regarding the relationships between perspective taking, emotions, and de-escalation.

Second, we used student subjects and the role that we placed them in is arguably not one that they would have much, if any, actual experience with. This raises concerns regarding the extent to which our results might differ had we used actual working professionals who were more familiar with the role of a new product development director. Still, based on the consideration of the type of generalization we sought to make (Compeau et al. 2012), we believe that student subjects, while not ideal, can be justified. More specifically, our study was aimed at generalizing to theory (Yin 2009), and thus the use of student subjects was deemed appropriate. Perspective taking is a cognitive activity that commonly occurs in both workplace settings and in normal life and we have no reason to believe that managers and executives would behave in a different way with respect to being influenced by perspective taking. However, the use of student subjects does limit our ability to generalize our findings. Future research may address this issue by investigating the influence of perspective taking and anticipated guilt using a sample that involves industry professionals.

Finally, we limited our focus to a specific type of anticipatory emotion, namely, anticipated guilt. De-escalation situations may involve a wide variety of emotions that may have different effects on de-escalation of commitment. Additionally, our findings suggest that when the personal cost involved with de-escalation is low, anticipated guilt does not mediate the relationship between perspective taking and de-escalation. Other psychological mechanisms or emotions (e.g., empathy) may play a key role in linking perspective taking and de-escalation when personal cost is low. Future research is warranted to investigate the extent to which other emotions influence de-escalation behaviors.

Conclusion

Prior studies in the de-escalation literature have focused on identifying tactics that promote de-escalation of commitment, yet these tactics may not always be practical. In this study, we used the notion of perspective taking to propose a simple “psychological” tactic that can induce de-escalation in software product launch settings. Through a laboratory experiment, we found strong support that taking the perspective of individuals that can be negatively influenced by a product launch can indeed effectively promote de-escalation of commitment in this context. Furthermore, we found that the experiences of anticipated guilt mediate the relationship between perspective taking and de-escalation, and this indirect effect is significantly greater when a decision maker’s personal cost associated with de-escalation is high rather than low.

References

- Ashkanasy, N. M., and Daus, C. S. 2002. "Emotion in the Workplace: The New Challenge for Managers," *Academy of Management Executive* (16:1), pp. 76-86.
- Barton, S. L., Duchon, D., and Dunegan, K. J. 1989. "An Empirical Test of Staw and Ross's Prescriptions for the Management of Escalation of Commitment Behavior in Organizations," *Decision Sciences* (20:3), pp. 532-544.
- Batson, C. D. 1991. *The Altruism Question: Toward a Social-Psychological Answer*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Batson, C. D., Batson, J. G., Griffitt, C. A., Barrientos, S., Brandt, J. R., Sprengelmeyer, P., and Bayly, M. J. 1989. "Negative-State Relief and the Empathy-Altruism Hypothesis," *Journal of Personality and Social Psychology* (56:6), pp. 922-933.
- Batson, C. D., Early, S., and Salvarani, G. 1997a. "Perspective Taking: Imagining How Another Feels Versus Imaging How You Would Feel," *Personality and Social Psychology Bulletin* (23:7), pp. 751-758.
- Batson, C. D., Polycarpou, M. P., Harmon-Jones, E., Imhoff, H. J., Mitchener, E. C., Bednar, L. L., Klein, T. R., and Highberger, L. 1997b. "Empathy and Attitudes: Can Feeling for a Member of a Stigmatized Group Improve Feelings toward the Group?," *Journal of Personality and Social Psychology* (72:1), pp. 105-118.
- Baumeister, R. F., Stillwell, A. M., and Heatherton, T. F. 1994. "Guilt: An Interpersonal Approach," *Psychological Bulletin* (115:2), pp. 243-267.
- Baumeister, R. F., Vohs, K. D., Nathan DeWall, C., and Liqing Zhang. 2007. "How Emotion Shapes Behavior: Feedback, Anticipation, and Reflection, Rather Than Direct Causation," *Personality and Social Psychology Review* (11:2), pp. 167-203.
- Biyalogorsky, E., Boulding, W., and Staelin, R. 2006. "Stuck in the Past: Why Managers Persist with New Product Failures," *Journal of Marketing* (70:2), pp. 108-121.
- Boland, R. J., and Tenkasi, R. V. 1995. "Perspective Making and Perspective Taking in Communities of Knowing," *Organization Science* (6:4), pp. 350-372.
- Boulding, W., Morgan, R., and Staelin, R. 1997. "Pulling the Plug to Stop the New Product Drain," *Journal of Marketing Research* (34:1), pp. 164-176.
- Brockner, J. 1992. "The Escalation of Commitment to a Failing Course of Action: Toward Theoretical Progress," *Academy of Management Review* (17:1), pp. 39-61.
- Brockner, J., Shaw, M. C., and Rubin, J. Z. 1979. "Factors Affecting Withdrawal from an Escalating Conflict: Quitting before It's Too Late," *Journal of Experimental Social Psychology* (15:5), pp. 492-503.
- Chandler, M. J. 1973. "Egocentrism and Antisocial Behavior: The Assessment and Training of Social Perspective-Taking Skills," *Developmental Psychology* (9:3), pp. 326-332.
- Chang, Luke J., Smith, A., Dufwenberg, M., and Sanfey, Alan G. 2011. "Triangulating the Neural, Psychological, and Economic Bases of Guilt Aversion," *Neuron* (70:3), pp. 560-572.
- Chin, W. W. 1998. "The Partial Least Squares Approach to Structural Equation Modeling," in *Modern Methods for Business Research*, G.A. Marcoulides (ed.). Mahwah, NJ: Lawrence Erlbaum, pp. 295-336.
- Coke, J. S., Batson, C. D., and McDavis, K. 1978. "Empathic Mediation of Helping: A Two-Stage Model," *Journal of Personality and Social Psychology* (36:7), pp. 752-766.
- Compeau, D., Marcolin, B., Kelley, H., and Higgins, C. 2012. "Research Commentary—Generalizability of Information Systems Research Using Student Subjects—a Reflection on Our Practices and Recommendations for Future Research," *Information Systems Research* (23:4), pp. 1093-1109.
- Conlon, D. E., and Garland, H. 1993. "The Role of Project Completion Information in Resource Allocation Decisions," *Academy of Management Journal* (36:2), pp. 402-413.
- Cook, T. D., and Campbell, D. T. 1979. *Quasi-Experimentation: Design and Analysis for Field Settings*. Boston, MA: Houghton-Mifflin.
- Cooke-Davies, T. 2002. "The "Real" Success Factors on Projects," *International Journal of Project Management* (20:3), pp. 185-190.
- Davis, M. H., Conklin, L., Smith, A., and Luce, C. 1996. "Effect of Perspective Taking on the Cognitive Representation of Persons: A Merging of Self and Other," *Journal of Personality and Social Psychology* (70:4), pp. 713-726.

- Dennis, A. R., and Valacich, J. S. 2001. "Conducting Experimental Research in Information Systems," *Communications of the Association for Information Systems* (7), pp. 1-41.
- Drummond, H. 1995. "De-Escalation in Decision Making: A Case of a Disastrous Partnership," *Journal of Management Studies* (32:3), pp. 265-281.
- Drummond, H. 1996. "The Politics of Risk: Trials and Tribulations of the Taurus Project," *Journal of Information Technology* (11:4), pp. 347-357.
- Edwards, J. R., and Lambert, L. S. 2007. "Methods for Integrating Moderation and Mediation: A General Analytical Framework Using Moderated Path Analysis," *Psychological Methods* (12:1), pp. 1-22.
- Flyvbjerg, B., and Budzier, A. 2011. "Why Your It Project May Be Riskier Than You Think," *Harvard Business Review* (89), pp. 23-25.
- Galinsky, A. D., and Mussweiler, T. 2001. "First Offers as Anchors: The Role of Perspective-Taking and Negotiator Focus," *Journal of Personality and Social Psychology* (81:4), pp. 657-669.
- Galinsky, A. D., Wang, C. S., and Ku, G. 2008. "Perspective-Takers Behave More Stereotypically," *Journal of Personality and Social Psychology* (95:2), pp. 404-419.
- Garland, H., Sandefur, C. A., and Rogers, A. C. 1990. "De-Escalation of Commitment in Oil Exploration: When Sunk Costs and Negative Feedback Coincide," *Journal of Applied Psychology* (75:6), pp. 721-727.
- Grant, A. M., and Berry, J. W. 2011. "The Necessity of Others Is the Mother of Invention: Intrinsic and Prosocial Motivations, Perspective Taking, and Creativity," *Academy of Management Journal* (54:1), pp. 73-96.
- Grant, A. M., and Wrzesniewski, A. 2010. "I Won't Let You Down... Or Will I? Core Self-Evaluations, Other-Orientation, Anticipated Guilt and Gratitude, and Job Performance," *Journal of Applied Psychology* (95:1), pp. 108-121.
- Gunia, B. C., Sivanathan, N., and Galinsky, A. D. 2009. "Vicarious Entrapment: Your Sunk Costs, My Escalation of Commitment," *Journal of Experimental Social Psychology* (45:6), pp. 1238-1244.
- Hayes, A. F. 2013a. "An Index and Simple Test of Linear Moderated Mediation." Manuscript in review.
- Hayes, A. F. 2013b. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York, NY: Guilford Press.
- Heath, C. 1995. "Escalation and De-Escalation of Commitment in Response to Sunk Costs: The Role of Budgeting in Mental Accounting," *Organizational Behavior and Human Decision Processes* (62:1), pp. 38-54.
- Heng, C.-S., Tan, B. C. Y., and Wei, K.-K. 2003. "De-Escalation of Commitment in Software Projects: Who Matters? What Matters?," *Information & Management* (41:1), pp. 99-110.
- Hoever, I. J., van Knippenberg, D., van Ginkel, W. P., and Barkema, H. G. 2012. "Fostering Team Creativity: Perspective Taking as Key to Unlocking Diversity's Potential," *Journal of Applied Psychology* (97:5), pp. 982-996.
- Kamdar, D., McAllister, D. J., and Turban, D. B. 2006. "'All in a Day's Work': How Follower Individual Differences and Justice Perceptions Predict Ocb Role Definitions and Behavior," *Journal of Applied Psychology* (91:4), pp. 841-855.
- Keil, M. 1995. "Pulling the Plug: Software Project Management and the Problem of Project Escalation," *MIS Quarterly* (19:4), pp. 421-447.
- Keil, M., Depledge, G., and Rai, A. 2007. "Escalation: The Role of Problem Recognition and Cognitive Bias," *Decision Sciences* (38:3), pp. 391-421.
- Keil, M., Mann, J., and Rai, A. 2000a. "Why Software Projects Escalate: An Empirical Analysis and Test of Four Theoretical Models," *MIS Quarterly* (24:4), pp. 631-664.
- Keil, M., Mixon, R., Saarinen, T., and Tuunainen, V. 1995. "Understanding Runaway Information Technology Projects: Results from an International Research Program Based on Escalation Theory," *Journal of Management Information Systems* (11:3), pp. 67-87.
- Keil, M., and Robey, D. 1999. "Turning around Troubled Software Projects: An Exploratory Study of the Deescalation of Commitment to Failing Courses of Action," *Journal of Management Information Systems* (15:4), pp. 63-87.
- Keil, M., Tan, B. C. Y., Wei, K.-K., Saarinen, T., Tuunainen, V., and Wassenaar, A. 2000b. "A Cross-Cultural Study on Escalation of Commitment Behavior in Software Projects," *MIS Quarterly* (24:2), pp. 299-325.
- Ketelaar, T., and Tung Au, W. 2003. "The Effects of Feelings of Guilt on the Behaviour of Uncooperative Individuals in Repeated Social Bargaining Games: An Affect-as-Information Interpretation of the Role of Emotion in Social Interaction," *Cognition & Emotion* (17:3), pp. 429-453.

- Klein, G., Jiang, J. J., and Cheney, P. 2009. "Resolving Difference Score Issues in Information Systems Research," *MIS Quarterly* (33:4), pp. 811-826.
- Ku, G. 2008. "Learning to De-Escalate: The Effects of Regret in Escalation of Commitment," *Organizational Behavior and Human Decision Processes* (105:2), pp. 221-232.
- Lee, J. S., Cuellar, M. J., Keil, M., and Johnson, R. D. 2014. "The Role of a Bad News Reporter in Information Technology Project Escalation: A Deaf Effect Perspective," *SIGMIS DATABASE for Advances in Information Systems* (45:3), pp. 8-29.
- Lee, J. S., Keil, M., and Kasi, V. 2012. "The Effect of an Initial Budget and Schedule Goal on Software Project Escalation," *Journal of Management Information Systems* (29:1), pp. 53-78.
- Lindsey, L. L. M. 2005. "Anticipated Guilt as Behavioral Motivation," *Human Communication Research* (31:4), pp. 453-481.
- Lindsey, L. L. M., Kimo Ah Yun, and Hill, J. B. 2007. "Anticipated Guilt as Motivation to Help Unknown Others: An Examination of Empathy as a Moderator," *Communication Research* (34:4), pp. 468-480.
- McCain, B. E. 1986. "Continuing Investment under Conditions of Failure: A Laboratory Study of the Limits to Escalation," *Journal of Applied Psychology* (71:2), pp. 280-284.
- Montealegre, R., and Keil, M. 2000. "De-Escalating Information Technology Projects: Lessons from the Denver International Airport," *MIS Quarterly* (24:3), pp. 417-447.
- Mossler, D. G., Marvin, R. S., and Greenberg, M. T. 1976. "Conceptual Perspective Taking in 2-to 6-Year-Old Children," *Developmental Psychology* (12:1), pp. 85-86.
- Northcraft, G. B., and Neale, M. A. 1986. "Opportunity Costs and the Framing of Resource Allocation Decisions," *Organizational Behavior and Human Decision Processes* (37:3), pp. 348-356.
- Pan, G. S. C., Pan, S. L., and Flynn, D. 2004. "De-Escalation of Commitment to Information Systems Projects: A Process Perspective," *The Journal of Strategic Information Systems* (13:3), pp. 247-270.
- Parker, S. K., Atkins, P. W. B., and Axtell, C. M. 2008. "Building Better Workplaces through Individual Perspective Taking: A Fresh Look at a Fundamental Human Process," in *International Review of Industrial and Organizational Psychology 2008*. John Wiley & Sons, Ltd, pp. 149-196.
- Parker, S. K., and Axtell, C. M. 2001. "Seeing Another Viewpoint: Antecedents and Outcomes of Employee Perspective Taking," *Academy of Management Journal* (44:6), pp. 1085-1100.
- Piaget, J., and Inhelder, B. 1969. *The Psychology of the Child*. New York, NY: Basic Books.
- Powers, S. W., Kashikar-Zuck, S. M., Allen, J. R., and et al. 2013. "Cognitive Behavioral Therapy Plus Amitriptyline for Chronic Migraine in Children and Adolescents a Randomized Clinical Trial," *The Journal of the American Medical Association* (310:24), pp. 2622-2630.
- Ringle, C. M., Wende, S., and Will, S. 2005. "Smartpls 2.0 (M3)." Hamburg.
- Ross, J., and Staw, B. M. 1993. "Organizational Escalation and Exit: Lessons from the Shoreham Nuclear Power Plant," *Academy of Management Journal* (36:4), pp. 701-732.
- Simonson, I., and Staw, B. M. 1992. "Deescalation Strategies: A Comparison of Techniques for Reducing Commitment to Losing Courses of Action," *Journal of Applied Psychology* (77:4), pp. 419-426.
- Somashekhar, S., and Goldstein, A. 2013. "Full Testing of Healthcare.Gov Began Too Late, Contractors Say." *The Washington Post* Retrieved April 21, 2014, from http://www.washingtonpost.com/politics/house-panel-grills-contractors-on-troubled-health-insurance-web-site/2013/10/24/8f42c748-3ca7-11e3-b7ba-503fb5822c3e_story.html
- Standish Group. 2013. "Chaos Manifesto 2013," The Standish Group International.
- Staw, B. M. 1976. "Knee-Deep in the Big Muddy: A Study of Escalating Commitment to a Chosen Course of Action," *Organizational Behavior and Human Performance* (16:1), pp. 27-44.
- Staw, B. M. 1981. "The Escalation of Commitment to a Course of Action," *Academy of Management Review* (6:4), pp. 577-587.
- Tangney, J. P., and Dearing, R. L. 2004. *Shame and Guilt*. New York, NY: Guilford Press.
- Underwood, B., and Moore, B. 1982. "Perspective-Taking and Altruism," *Psychological Bulletin* (91:1), pp. 143-173.
- Vaish, A., Carpenter, M., and Tomasello, M. 2009. "Sympathy through Affective Perspective Taking and Its Relation to Prosocial Behavior in Toddlers," *Developmental Psychology* (45:2), pp. 534-543.
- Vescio, T. K., Gretchen B. Sechrist, T. K., and Paolucci, M. P. 2003. "Perspective Taking and Prejudice Reduction: The Mediation Role of Empathy Arousal and Situational Attributions," *European Journal of Social Psychology* (33:4), pp. 455-472.

- Wong, K. F. E., and Kwong, J. Y. Y. 2007. "The Role of Anticipated Regret in Escalation of Commitment," *Journal of Applied Psychology* (92:2), pp. 545-554.
- Wong, K. F. E., Yik, M., and Kwong, J. Y. Y. 2006. "Understanding the Emotional Aspects of Escalation of Commitment: The Role of Negative Affect," *Journal of Applied Psychology* (91:2), pp. 282-297.
- Wowak, A. J., Hambrick, D. C., and Henderson, A. D. 2011. "Do Ceos Encounter within-Tenure Settling Up? A Multiperiod Perspective on Executive Pay and Dismissal," *Academy of Management Journal* (54:4), pp. 719-739.
- Yin, R. K. 2009. *Case Study Research: Design and Methods*. Thousand Oaks, CA: Sage.

Appendix A. Experimental Scenario and Manipulations

1. Phase 1 scenario (prior to pre-test)

You are the director of new product development at Radiation Treatment Incorporated, a company that specializes in machines that deliver prescribed doses of radiation to treat cancer patients. At the heart of the machine is a specialized software program that controls the intensity and targeting of an external radiation beam for treating cancer tumors.

For the past year, you have been responsible for an exciting new project, CAPS – which involves new software technology that promises to improve the targeting of the radiation so that there are fewer side effects to surrounding tissues in the body. Next week the new software will be installed in thousands of hospitals and treatment centers around the world.

Today, you discovered a software defect, which could under extremely rare circumstances result in increased doses of radiation for one in a billion patients that are treated. If this were to occur, the patient might experience radiation sickness with symptoms that include nausea, vomiting, fever, headaches, and increased susceptibility to infections. When you brought the matter to the attention of the CEO, **he told you to ignore the defect completely and ordered you to launch the product as scheduled.** His explanation was that the risks were minimal and that your company had already entered into contracts with hospitals to deliver the product next week. Therefore, **a delay in the product launch will lead to a costly lawsuit against your company.** At the present time, only you and the CEO are aware of the software defect.

At this point, you are now wondering whether or not you should launch the product next week as scheduled, or delay the product launch indefinitely until the defect is fixed.

2. Phase 2 scenario (prior to post-test)

[Perspective taking]

Before making your final decision, you decided to consult with your best friend. After swearing her to secrecy, you explained your dilemma and solicited her advice on what to do. Your friend says the following: **“Put yourself in the shoes of someone whose mother may suffer from radiation sickness caused by this software. It could even be YOUR MOTHER. Wouldn’t you want to do everything you could to delay the launch to ensure that the product is not going to make your mother or anyone else’s mother sick?”**

[High cost]

You are responsible for the successful delivery of the product next week. **The CEO is notorious for not tolerating employees who disobey his orders. On multiple occasions you have observed situations in which employees who failed to follow the CEO’s orders were severely scolded and denied an expected promotion in spite of a very strong track record. And there is an unconfirmed rumor that, in one case, an employee was even fired for disobeying the CEO.**

[Low cost]

You are responsible for the successful delivery of the product next week. **The CEO is regarded as being very tolerant when employees disobey his orders. On multiple occasions you have observed situations in which employees who failed to follow the CEO’s orders still received expected promotions and were not scolded.**

At this point, you are trying to make your final decision. You are now wondering whether or not you should launch the product as scheduled, or delay the product launch indefinitely until the defect is fixed.

Appendix B. Constructs and Measurement Items

Construct	Measurement Item	
Willingness to Continue Product Launch	ESC1	I would launch the product as scheduled.
	ESC2	I would follow the CEO's order and launch this product as is.
Anticipated Guilt ¹	AGLT2	I would feel guilty if I launched the product as scheduled.
	AGLT3	I would feel sorry about following the CEO's order and launching the product as is.
	AGLT4	I expect that I would feel bad if I didn't try to delay the product launch.
Perspective Taking ²	PT1	I took my friend's advice into consideration.
	PT2	I took into consideration the person whose mother may suffer from radiation sickness caused by this software.
Personal Cost ²	COST1	If I don't follow the CEO's order, I may get severely scolded.
	COST2	The CEO is notorious for not tolerating employees who disobey his orders.

1. We originally had 5 items the measured anticipated guilt, but items 1 and 5 were excluded from the main analysis due to low item loadings in our additional testing of the research model using PLS. Because anticipated guilt was modeled as reflective and the items were interchangeable/highly correlated, we judged that dropping these items would not significantly reduce the content validity of anticipated guilt.
2. Manipulation checks – Perspective taking manipulation checks were given only to the perspective taking treatment group.