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Using Perspective-Taking to De-escalate Launch Date Commitment for Products with Known Software Defects

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Abstract: Previous research in software product development used the lens of escalation of commitment to study the problem of adhering to original product launch dates and suggested that decisions related to launching new products can be particularly prone to escalation of commitment because they involve a high level of uncertainty and large financial stakes. In this study, we propose *perspective-taking* as a de-escalation tactic to reduce product managers' commitment to the original product launch date when faced with severe software defects. In two laboratory experiments, we found that when participants took the perspective of product users who might be negatively affected by the launch of a defective software product, their

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commitment de-escalated more than when they took a shareholder's perspective. We also found that anticipated guilt about launching the product as scheduled mediated the relationship between perspective-taking and de-escalation. In addition, one of the experiments involved severe consequences associated with the software defects; in that case, we found that the mediation effect of anticipated guilt was moderated by the product managers' customer orientation. This study makes a theoretical contribution to the literature of de-escalation of commitment by proposing perspective-taking as a new de-escalation tactic, and by demonstrating the affect-based mechanism of perspective-taking that operates through anticipated guilt. While practitioners may use perspective-taking as an effective tactic in reducing commitment to launching a defective software product, our findings highlight the importance of selecting the appropriate target perspective.

KEY WORDS AND PHRASES: new product development, software defects, software launch, product launch decision, de-escalation of commitment, perspective-taking, customer orientation.

Introduction

On-time delivery is a key factor in the success of new software products or technology products involving software programs, both of which are often subject to significant time pressure due either to time-to-market considerations or contractually bound deadlines [27, 31, 60]. As a result, when developing these products, managers often choose to honor the original product launch date, even when a product has severe software defects (i.e., bugs or vulnerabilities) [2].

Previous research in software product development uses the lens of escalation of commitment to study the problem of adhering to original product launch dates. Specifically, Keil et al. [31, p. 399] suggested that "releasing the product in adherence to a previously chosen schedule, without addressing the bugs, constitutes escalation of commitment." Decisions related to launching new products can be particularly prone to escalation of commitment because they involve a high uncertainty and large financial stakes [8, 59].[1] HealthCare.Gov (the federal online health insurance marketplace) offers an example of what can happen when organizations are over committed to a launch date and ignore known software defects. Prior to the site's launch, the Obama administration was reportedly warned of insufficient testing, but still decided to go ahead with the promised launch date [65]. When the website launched as scheduled on October 1, 2013, it immediately became an end-user nightmare due to its many technical problems. As this example illustrates, launching a product with known software defects due to a launch-date commitment can have negative consequences. This problem motivates our study, which aims to develop and test a new intervention based on prospective-taking theory that can reduce a product manager's commitment to an original product launch date.

Prior research suggests that the need to defend one's ego is a strong force in escalation of commitment [62]. For example, individuals may continue a failing course of action in order to self-justify their prior decision to initiate that course of

action [32, 33]. Furthermore, prior sunk-cost research suggests that people may escalate commitment to avoid appearing wasteful [51]. In fact, personal responsibility for initiating a course of action and sunk cost have become the dominant focus of much of the escalation literature [62]. These egocentric and self-serving escalation drivers have prompted researchers to design tactics that reduce the need for people to defend their egos; examples include reducing the threat of negative outcomes (e.g., [34]) or creating a culture that tolerates failure (e.g., [52]). Our work has potential to extend this prior de-escalation research by proposing and empirically probing a tactic that can help break or mitigate decision makers' egocentric thinking. Specifically, we propose that when product managers adopt the perspective of product users who might be negatively affected by a defective software product's launch—that is, the *victim's perspective*—and examine escalation decision consequences from that viewpoint (rather than their own), the product managers' egocentric thinking breaks down and de-escalation can be achieved. In this context, de-escalation of commitment means delaying the product launch and is reflected in the product manager's reduced willingness to launch the product as scheduled [31].

Perspective-taking is known as a powerful psychological tactic that can cause emotional responses [5], and prior de-escalation research found that emotions (e.g., regret) can be useful in de-escalating commitment [36]. This suggests that perspective-taking's effect on de-escalation of commitment may operate through a product manager's emotional responses. We propose that perspective-taking can induce guilt about launching software products with defects, which in turn promotes de-escalation of commitment. Prior research has suggested that anticipated emotions play an important role in decision making [38, 53] and that guilt can have a positive, beneficial influence in making better decisions [7]. Our work contributes to existing knowledge by showing that inducing anticipated guilt through perspective-taking can be used in a positive way in organizational settings.

Finally, our study investigates a factor that may amplify the indirect effect of perspective-taking on de-escalation of commitment, particularly in contexts where software product defects can have severe consequences, such as fatal health problems. Specifically, we suggest that having greater customer orientation—that is, being guided by beliefs that emphasize customer importance—may strengthen anticipated guilt's effect on de-escalation of commitment through a second-stage moderated mediation mechanism.

In summary, our study draws on perspective-taking theory and investigates how to de-escalate commitment in product launch decision settings. Specifically, we investigate: (1) the impact of perspective-taking on de-escalation of commitment, (2) anticipated guilt's mediating role in the relationship between perspective-taking and de-escalation, and (3) how customer orientation moderates the relationship between anticipated guilt and de-escalation. To achieve these objectives, we conducted two laboratory experiments with product managers in the IT industry. The first experiment involved a decision about whether or not to proceed with the scheduled launch date of an implantable heart device that had a software defect that could lead to severe consequences. The second experiment involved a decision about whether or

not to launch an e-commerce software product with software vulnerabilities that could result in identity theft.

In the following, we first review the literature on de-escalation of commitment and, then, offer details on the theoretical background and our proposed hypotheses. Next, we present the methods and results of the two experiments. We conclude the paper by discussing the implications for research and practice. Figure 1 shows our research model.

Literature Review

De-escalation of Commitment

To date, there has been a rich body of literature investigating escalation of commitment [63]. Recent studies in the literature have continued to focus on the reasons for why escalation of commitment may occur in a variety of different contexts (e.g., [12, 58, 70]), including: goal setting [40], competitor performance [28], the inaction effect [17], performance appraisals [39], ego depletion [41], emotions [71], and inadequate upward communication [30, 64].[2] Yet, surprisingly less attention has been devoted to suggesting practical ways of inducing de-escalation of commitment [37]. De-escalation of commitment is generally defined as "reduced commitment to a failing course of action" [50, p. 418]; in the information systems (IS) project management context, it has been conceptualized as redirecting, delaying, or terminating troubled IS projects [31, 34, 50]. In terms of launching products that involve software, escalation of commitment is defined as adherence to an original launch date, despite known software defects such as bugs or security vulnerabilities [31]. In this context, delaying the product launch—that is, reducing adherence to the original product launch date—constitutes de-escalation of commitment. Although technology industry companies often release software products that contain both known and unknown defects and attempt to later fix those bugs with service packs, such behavior (whether rational or not) can nonetheless create problems for product users [27]. In situations where known defects could actually harm users, for the

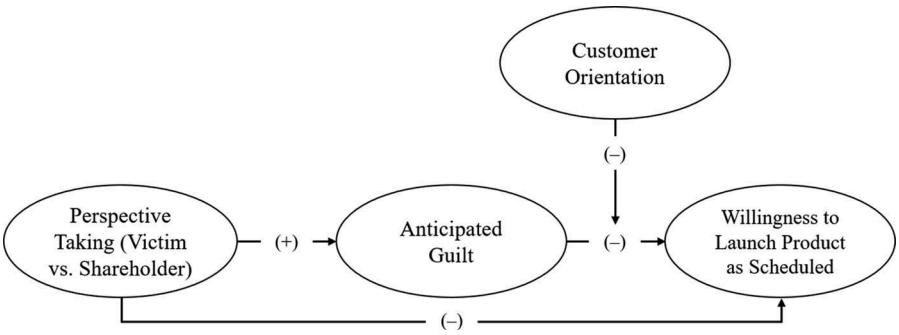

Figure 1. Research model.

company to simply launch the product and hope to service-pack the problem before it damages product users and the company's reputation is problematic at best.

Our review of IS research on de-escalation of commitment suggests that there is no de-escalation tactic specifically designed to reduce commitment to an original launch date in the presence of software defects. A broader review of de-escalation tactics, including not only IS literature, but also literature from management and psychology (see online Appendix A), suggests that existing tactics may be costly or difficult to implement [1, 49] because they require organizations to take extraordinary measures (such as changing top management [34]) or create a culture in which failure is accepted (e.g., [34, 52]).

In addition, McNamara et al. [47] suggest that many existing de-escalation tactics can reflect poorly on decision makers and threaten their egos. Prior escalation research suggested that ego threat is a strong force behind escalation of commitment [62] and focused on designing tactics to reduce the need for ego defensiveness (see online Appendix A). For example, reducing the threat of negative outcomes (from project failure) can help decision makers protect their egos should they decide to reduce their commitment to a troubled project [34]. These de-escalation tactics do not directly attempt to break or mitigate the decision maker's egocentric thinking. This is problematic, as egocentric thinking drives decisions that benefit only the decision maker, not those who might be affected by the decisions. For instance, in product launch decision settings, product managers might benefit from launching a product with known defects as scheduled if doing so lets them save face or receive financial compensation for meeting the promised date, even though launching the product could negatively impact users and hurt the company's reputation. Therefore, we argue that egocentric thinking should be discouraged in business decision settings involving escalation of commitment and suggest that taking the perspective of those who might be affected by such decisions can effectively break a decision makers' egocentric thinking. Furthermore, existing de-escalation tactics that focus on reducing ego defensiveness fail to consider the decision maker's emotions and how those emotions can help induce de-escalation of commitment. Our study aims to shed new light in this area, examining how perspective-taking can influence decision makers' emotions and *de-escalate their commitment*.

Our review of the literature on de-escalation of commitment tactics suggests that our research could make significant contributions by identifying a new de-escalation tactic that is: (1) specifically designed to address the problem of adherence to an original product launch date in spite of known software bugs, (2) cost-effective and practical, and (3) designed to break decision makers' egocentric thinking.

Perspective-Taking

Perspective-taking is a cognitive activity that involves adopting someone else's viewpoint and attempting to understand a situation based on their preferences, values, and needs [54]. Perspective-taking centers on a psychological connection

between self and others and has been shown to weaken the self–other boundary [22]. By adopting the thinking and feelings of others, perspective-taking can lead people to behave in ways that others might behave [46].

Prior research has shown that, by creating a connection between the self and other, perspective-taking can create many benefits across various contexts. Those benefits include inducing altruistic behavior [4], designing better electronic communication systems for knowledge-intensive firms [10], facilitating multiple group coordination [56], improving performance in interaction-based tasks [55], helping price negotiation [18], and improving creativity at work [20]. In the IS literature, Dickey et al. [15] investigated perspective-taking in the customer service context, focusing on representatives in a call center who addressed customer needs through text-based chat. Their research found that perspective-taking played a key role in service representatives understanding their customers and successfully resolving their issues [15].

To date, only one study has investigated perspective-taking in relation to escalation of commitment. In a series of experiments, Gunia et al. [22] 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. They suggested that this is due to individuals feeling "psychologically connected" and becoming "vicariously motivated to justify the actions of the first" [22, 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 the need to self-justify their prior decision to embark on that course of action [32]. Our study has the potential to add to prior research by showing that, contrary to what Gunia et al. reported [22], perspective-taking can be used to bring about *de-escalation* of commitment. That is, although taking the initial decision maker's perspective can lead to escalation, we suggest that perspective-taking's effect on decisions can vary depending on the perspective targeted. In our study, we focus on the perspective of product users who might be affected by the decision to launch a product with known defects (and compare this to the shareholder perspective); we then examine how that perspective might influence de-escalation decisions. First, we theorize how perspective-taking can be used to cause de-escalation of commitment.

Hypotheses Development

Effect of Perspective-Taking on De-escalation of Commitment

When considering perspective-taking, the choice of whose perspective to invoke is essential. Galinsky et al. [19] found that different perspective-taking targets led to different results. Specifically, Galinsky et al. [19] found that individuals who took a professor's perspective performed better on an analytic task than those who took the perspective of a cheerleader. The context of new product development and launch involves various stakeholders who often have conflicting interests [26]. It is

therefore critical to account for the thoughts and feelings associated with different stakeholders in new product development and identify an appropriate perspective to cause de-escalation of commitment.

For product managers, a key perspective in a product launch situation is that of product users, who may be negatively affected if a product is launched *as scheduled* even though it has software defects. *Product users* are those who are directly impacted by the product and determine its success in the market; their perspective is therefore one of the most important to consider. Another important perspective in this context is that of the company's shareholders, who may benefit financially from a product launching on its pre-announced launch date. Indeed, because delays in a product launch can lead to significant short-term financial losses for shareholders [25], product managers should also consider their perspective. While perspective-taking of both victims and shareholders can help break product managers' ego centric thinking, we expect that victim and shareholder perspectives would have opposite effects on de-escalation decisions.

In the context of product launch decisions, we suggest that product managers will be less willing to launch a defective product as scheduled when taking the perspective of a potential victim (the product user) than when taking the perspective of a shareholder. In decisions about whether or not to launch a product with software defects, delaying the launch may be desirable to improve the product's quality and prevent users from being harmed. Taking the product user's perspective may help product managers better appreciate the human impacts of launching such a product, thus promoting de-escalation of commitment to the original product launch date. In contrast, product managers taking the shareholder's perspective will be more willing to launch the product as scheduled, despite the defects, than those taking the product user's perspective because their focus is on how shareholders might be negatively affected by *delaying* the product launch [25].[3]

Hypothesis 1: Taking the perspective of a victim will lead to greater de-escalation than taking the perspective of a shareholder.

Underlying Mechanism of Perspective-Taking: Anticipated Guilt

Prior research has shown that perspective-taking tends to cause emotional responses [6]. These emotional responses are driven by a psychological connection between an individual and a perspective target; through this connection, the individual is able to better understand the target individual's feelings. Ultimately, such an improved understanding of how others feel can lead to changes in attitudes [6] or behaviors [14]. For instance, Coke et al.'s [14] experiment found that empathy caused by perspective-taking (in this case, taking the perspective of a student who had lost her parents in a car accident) led subjects to willingly volunteer a greater amount of their time (to help the student). In this study, we draw on prior perspective-taking research in which perspective-taking was found to cause an emotional change, which in turn led to a behavioral intention; we suggest that anticipated guilt caused by perspective-taking can lead to de-escalation of commitment.

Guilt is an unpleasant emotion that individuals experience when their actions cause harm to others or violate justice [21]. Anticipated guilt is a "prevention-focused" emotion [21, p. 110], involving concerns about experiencing guilt over future events [7, 44]. It can lead people to behave so as to avoid those future events that cause the anticipated guilt. While only a few studies have investigated anticipated guilt, they provide empirical evidence that it is a strong emotion that can bring about behavioral change [44]. For instance, anticipated guilt regarding how people may suffer and die from leukemia unless help is provided was found to promote bone marrow donations [44, 45].

Research suggests three perceptional components that could cause anticipated guilt: (1) perceiving a potential threat, (2) perceiving a potential response or solution and its efficacy in addressing or removing the threat, and (3) perceiving one's action in implementing the solution [44, 45]. Based on these three elements, individuals experience anticipated guilt when they imagine not implementing the solution that could have removed the threat. When experiencing anticipated guilt, individuals tend to make decisions or behave in a way that would allow them to avoid experiencing that feeling in the future. Drawing on prior research on anticipated guilt, we suggest that perspective-taking can help product managers perceive (1) a potential threat associated with launching a product with software defects, (2) the need to address the software defects, and (3) the need to delay the product launch (i.e., de-escalation of commitment). Therefore, we suggest that by taking the perspective of users who may be negatively affected by the launch of a product with software defects (i.e., taking the victim perspective), product managers will experience stronger anticipated guilt about launching such a product as scheduled because doing so could potentially harm the product's users. In contrast, product managers taking the shareholder perspective may experience less anticipated guilt about launching the product *as scheduled* than those taking the victim perspective because they will be more focused on evaluating potential negative consequences related to *delaying* the product launch (i.e., the financial loss caused to stakeholders) and thus may not perceive the threats associated with the product launch as strongly. Furthermore, product managers' anticipated guilt stemming from the consequences of launching a product as scheduled may influence their behavior so as to avoid experiencing guilt in the future. Specifically, we suggest that when product managers experience more anticipated guilt, they will be more reluctant to launch a product with software defects as scheduled. Thus, we propose the following hypothesis:

> *Hypothesis 2: Product managers' anticipated guilt about launching a product with software defects as scheduled will mediate the relationship between perspective-taking and de-escalation.*

Moderating Role of Customer Orientation

We investigate the product manager's value orientation as a factor moderating the indirect effect underlying the relationship between anticipated guilt and de-escalation. *Values* are a set of normative standards reflecting desired goals, states, and

behaviors, and they generally serve as the criteria that individuals use when deciding between alternative behaviors or outcomes that fulfill their needs [61]. Value orientation refers to the predominant guiding principles (i.e., values) that individuals espouse. Prior research suggests that employees' value orientation has significant implications for organizations and that the congruence between employee value orientations and organizational values influences important psychological (e.g., commitment) and performance-related outcomes [48]. Although limited, a few studies have also provided empirical evidence that value orientation can interact with affective experiences to influence behavior and decision making (e.g., [69]).

Among the literature's various value orientations, our interest here is in the *customer orientation* of product managers. Customer orientation refers to "a work value that captures the extent to which employees' job perceptions, attitudes, and behaviors are guided by an enduring belief in the importance of customer satisfaction" [72, p. 24]. Customer-oriented employees tend to exhibit greater concern for their products/services' users and act to best addresses their users' needs [67]. Prior research has suggested that a strong customer orientation is fundamental for the success of new products because it emphasizes producing a quality product that satisfies customer needs [29]. We deemed product managers' customer orientation to be important in the context of launching a product with software defects because that orientation is likely to make them more sensitive to the delivery of a reliable product. In what follows, we discuss the moderating role of product managers' customer orientation on the relationship between anticipated guilt and de-escalation of commitment.

We suggest that product managers' degree of customer orientation will moderate the relationship between anticipated guilt and willingness to launch the product. More specifically, we theorize that when product managers are more customer-oriented, anticipated guilt will have a stronger negative impact on willingness to launch as scheduled. Because customer-oriented product managers are driven by values that emphasize the importance of addressing customers' best interests, they may be more sensitive to potential harm to product users from launching a product with software defects. Therefore, we expect that as product managers' customer orientation increases, the relationship will strengthen between anticipated guilt and the willingness to launch a product with potentially harmful software defects.

Furthermore, we suggest a moderated-mediation relationship—that is, the anticipated guilt's mediating effect is moderated by the product manager's degree of customer orientation Specifically, we suggest that, in product managers who are highly customer-oriented, anticipated guilt will have a greater mediating effect on the relationship between perspective-taking and willingness to launch a product with software defects than those who are less customer-oriented. Thus, we state the following hypothesis:

> *Hypothesis 3: Product managers' customer orientation 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 product managers are more, rather than less, customer-oriented.*

Research Method

To test our research model and hypotheses, we conducted two scenario-based laboratory experiments—an approach that let us create a highly controlled setting that would allow us to achieve high internal validity such that we could examine the proposed causal relationships between perspective-taking and de-escalation. Laboratory experiments have been widely used in prior de-escalation studies (e.g., [23]), as well as in perspective-taking studies (e.g., [19]). We designed both of our experiments to investigate: (1) how taking a victim perspective (vs. a shareholder perspective) influences de-escalation in a product launch decision setting, (2) how anticipated guilt mediates the relationship between perspective-taking and de-escalation, and (3) how customer orientation moderates anticipated guilt's mediating effect on the relationship between perspective-taking and de-escalation (i.e., how it achieves moderated mediation).

We designed our experimental scenario to be consistent with escalation situations that involve a decision about whether or not to launch a product with known software defects as originally scheduled [31]. In Experiment 1, we focused on a product launch decision in which software defects could cause severe consequences: the product was a wireless implantable heart device with software vulnerabilities that could result in life-threatening situations. We chose this extreme context to maximize the effects associated with taking a victim's perspective (anticipated guilt and de-escalation of commitment). In Experiment 2, we focused on a product launch decision about a general software product with less severe consequences: an e-commerce platform with software vulnerabilities that could result in identity theft. Experiment 2's context let us investigate whether the effects of perspective-taking would be generalizable to a more common context that was not life-threatening.[4]

Experiment 1

Experimental Design and Participants

The experiment involved a basic randomized design comparing two treatments in which perspective-taking was manipulated as a between subject factor. Each participant was randomly assigned to one of the two experimental conditions (i.e., victim vs. shareholder perspective). We instructed participants to read a decision scenario, complete the perspective-taking manipulation, and answer a series of questions. Prior to the actual experiment, we conducted several rounds of pilot testing to: (1) refine the scenario, (2) refine the manipulation of perspective-taking, and (3) validate the measures included in the experiment.

The experiment was conducted online, and we recruited the target subjects—product managers working in the information technology (IT) industry—through a panel services provider.[5] We received a total of 72 usable responses. Participants' average age was 37.6 years, and approximately 69% were male (n = 50) and 31% were female (n = 22). The average overall work experience of participants was 14.7

years, with an average of 7.4 years of product-management-related work experience and 10.6 years of IT-related work experience.[6]

Decision Task

In Experiment 1, participants were introduced to a product launch decision scenario adapted from prior escalation research [31] (see online Appendix B). In this scenario, participants were asked to take the role of a product manager who was responsible for developing and launching a new implantable heart device for treating heart diseases. A central feature of this device was software that enabled wireless transmission of diagnostic information so doctors could remotely monitor their patients. Participants were told that the product was scheduled to launch in two weeks, but that a third-party clinical research organization had reported that the device had a remote chance of being hacked, which could result in the device shutting down or delivering potentially fatal electrical pulses to the patients. Participants were further notified that they had full responsibility for launching the heart device as scheduled, and that they had already announced on-time delivery to several leading hospitals.

Manipulation and Measures

After reading the scenario, the participants were introduced to the perspective-taking manipulation. They were asked to take the perspective of either a victim or a shareholder and write a few sentences about how they would think and feel from that perspective. Specifically, participants in the victim perspective treatment group were asked to take the perspective of someone whose father might die if the heart device was hacked. Participants in the shareholder perspective treatment group were asked to take the perspective of a shareholder who would lose money if the product launch was delayed. Following this perspective-taking manipulation, participants were asked to answer a set of questions concerning de-escalation of commitment. The questions were related to their willingness to launch the product as scheduled (adapted from Lee et al. [40]) and to their anticipated guilt (adapted from Lindsey [44]); online Appendix D shows the actual measurement items. Next, participants were asked to respond to the manipulation check question (which was adapted to each treatment), followed by the customer-orientation measures adapted from Rindfleisch and Moorman [57]. Finally, participants were asked to respond to a few demographic questions.

Results

Manipulation Check and Descriptive Statistics

To assess the perspective-taking manipulation's effectiveness, we examined the mean value of the perspective-taking manipulation check for each treatment group.

Participants in the victim perspective treatment group were asked to indicate the degree to which they took the perspective of someone whose father may die from cardiac arrest, whereas subjects in the shareholder perspective treatment group were asked to indicate the degree to which they took the perspective of a shareholder investing money in the company. The manipulation check question's mean value (based on a seven-point Likert scale) was 6.43 (n = 35, SD = .70) for the victim perspective treatment group and 6.00 (n = 37, SD = .91) for the shareholder perspective treatment group, indicating that our manipulations were effective. Table 1 shows the descriptive statistics and reliabilities for Experiment 1's constructs.

Hypotheses Testing

To test our hypotheses, we used Hayes' PROCESS macro for SPSS [24]. Because our research model involved second-stage moderated mediation [16, 24], we conducted a moderated mediation analysis by configuring our model based on Model 14 with 10,000 bootstrap samples [24]. As Figure 2 shows, product managers who took the victim perspective were less willing to launch the product as scheduled ($\beta = -1.25$, $t = -3.70$, $p < .001$) than those who took the shareholder perspective, thus providing support for Hypothesis 1. Taking the victim's perspective (compared to the shareholder's) led to greater feelings of anticipated guilt ($\beta = .94$, $t = 2.13$, $p < .05$) about launching a product as scheduled, which in turn had a negative impact on willingness to launch ($\beta = -.64$, $t = -7.16$, $p < .001$). Further, customer orientation moderated the relationship between anticipated guilt and willingness to launch ($\beta = -.25$, $t = -2.14$, $p < .05$). From the assessment of R^2 values, we found that our model explained approximately 6% of the variance in anticipated guilt ($R^2 = .06$, $F(1, 70) = 4.55$, $p < .05$) and 58% in willingness to launch ($R^2 = .58$, $F(4, 67) = 23.07$, $p < .001$).

Having established customer orientation as a moderator for the relationship between anticipated guilt and willingness to launch, we proceeded to the test of

Table 1. Descriptive Statistics and Reliability of Constructs (Experiment 1)

	Variable	M	SD	Cronbach's α	1	2	3	4
1	Perspective-Taking[a]	–	–	–	–			
2	Willingness to Launch[b]	4.17	2.08	.88	−.43**	–		
3	Anticipated Guilt	4.58	1.91	.96	.25*	−.67**	–	
4	Customer Orientation[c]	6.09	.82	.88	.08	.09	.06	–

Notes: [a]Experimentally manipulated between-subject variable (shareholder perspective coded as 0 and victim perspective coded as 1).

[b]The mean Willingness to Launch was 5.04 for the shareholder treatment group and 3.26 for the victim treatment group.

[c]The fourth item measuring Customer Orientation was excluded from analyses due to low loadings in the factor analysis (see online Appendix E for details).

*p < .05. **p < .01.

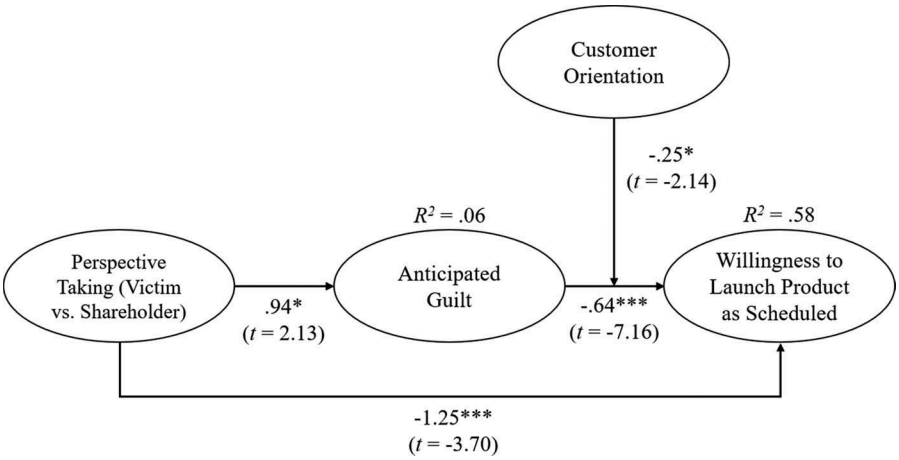

Figure 2. Path analysis results of Experiment 1.
*$p < .05$. ***$p < .001$.

mediation (Hypothesis 2) and moderated mediation (Hypothesis 3) hypotheses using analysis results from Model 14 in PROCESS. Table 2 summarizes the direct effect of perspective-taking on de-escalation, as well as the indirect effects of perspective-taking on de-escalation at three different customer-orientation levels (i.e., Mean and ± 1SD). At all three levels of customer orientation, the conditional indirect effects of perspective-taking were significant because the upper- and lower-level bias-controlled 95% confidence intervals (BCCIs) did not include zero. The direct effect of perspective-taking was also significant, indicating partial mediation and thus supporting Hypothesis 2. We also found support for Hypothesis 3: the index of moderated mediation [24] was statistically significant because the BCCI did not include zero (index = -.23, SE = .15, Lower-level BCCI = −.65, Upper-level BCCI = −.02), thus indicating that the indirect effect of perspective-taking on willingness to launch through anticipated guilt was moderated by customer orientation. Specifically, the indirect effect of perspective-taking became stronger when product

Table 2. Direct Effect and Conditional Indirect Effects of Perspective-Taking

Perspective-Taking		Effect	*SE*	Lower-level BCCI[1]	Upper-level BCCI[a]
Direct Effect		−1.25	.34	−1.93	−.58
Conditional Indirect Effects	High Customer Orientation	−.79	.37	−1.57	−.09
	Mean Customer Orientation	−.60	.28	−1.16	−.07
	Low Customer Orientation	−.41	.21	−.90	−.07

Notes: [a]BCCI = bias-controlled 95% confidence interval.

managers were more customer-oriented. The results indicate that anticipated guilt plays a critical role in inducing de-escalation through perspective-taking, especially for product managers with greater customer orientation.

Based on the moderation analysis results, we examined how customer orientation moderated the relationship between anticipated guilt and willingness to launch (see Figure 3).[7] Results from a simple slope analysis indicated that anticipated guilt had a significant negative effect on willingness to launch at all three levels of customer orientation: low (–1SD, $\beta = -.44$, $t = -3.44$, $p < .001$), mean ($\beta = -.64$, $t = -7.18$, $p < .001$) and high (+1SD, $\beta = -.84$, $t = -7.16$, $p < .001$). Our findings suggest that anticipated guilt's negative effect on willingness to launch became stronger when product managers were more customer-oriented (see the steeper slopes in Figure 3). Specifically, product managers who experienced greater anticipated guilt were less willing to launch a product as scheduled when their degree of customer orientation was greater.

It is worth noting that in Figure 3 we see a pattern that product managers with a higher customer orientation were more willing to launch a product with software defects as scheduled (i.e., a positive effect of customer orientation on willingness to launch) and this pattern reverses when anticipated guilt is high. We speculate as to why we might see such a pattern as follows. When there is no strong anticipated guilt about launching the product as scheduled, project managers may not perceive the product launch as being harmful to the customers. Thus, product managers with a higher customer orientation might focus more on getting the product delivered to the customers when there is no strong anticipated guilt, and therefore be more willing to launch the product as scheduled. In contrast, when there is strong anticipated guilt about launching the product as scheduled, customer orientation leads to de-escalation.

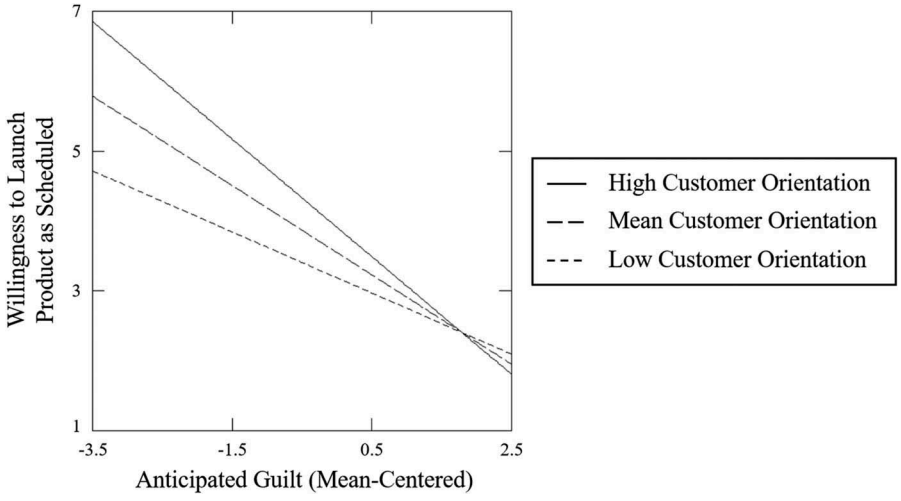

Figure 3. Interaction plot showing the moderating effect of customer orientation on anticipated guilt and willingness to launch product as scheduled.

Experiment 2

Experiment 1 supported the relationships hypothesized in our research model. However, to maximize our perspective-taking manipulation's strength, we situated Experiment 1 in a context in which launching a product with software defects could have life-threatening consequences. While such a situation is not uncommon in the healthcare industry, such negative consequences are arguably extreme, and the effects of perspective-taking may not be generalizable to contexts with less severe consequences. To explore this, Experiment 2 focused on a more general context with less severe negative consequences: launching an e-commerce platform with software vulnerabilities that could result in identity theft. This experiment let us add to our findings' generalizability by exploring perspective-taking's effects in contexts that involve both severe and less severe consequences.

Experimental Design and Participants

As with Experiment 1, Experiment 2 had a basic randomized design comparing two treatments in which participants were randomly assigned to either the victim or shareholder condition. The experiment was conducted online and target subjects (product managers working in the IT industry) were recruited through the same panel services provider as in Experiment 1. We received a total of 84 usable responses. Participants' average age was 36.9 years; approximately 75% were male (n = 63) and 25% were female (n = 21). The average overall work experience of participants was 15.0 years, with 8.4 years of product-management-related work experience and 11.4 years of IT-related work experience on average. Participants' demographics showed no significant statistical differences between Experiment 1 and 2.

Decision Task

Experiment 2's scenario involved a product launch decision for an e-commerce platform (see online Appendix C) and was adapted from the Experiment 1 scenario to create a context with less severe negative consequences. The e-commerce platform had a new feature—using chatbot technology to automate messaging services with customers—that could reduce costs related to customer service and call centers. Participants were asked to take the role of a product manager responsible for developing and launching this e-commerce platform. They were told that the product was scheduled to be launched in two weeks, but that a third-party cyber-security organization had reported that the chatbot technology had a remote chance of being hacked, which could result in identity theft. As in Experiment 1, participants were told that they had full responsibility for launching the e-commerce platform as scheduled and that they had already announced on-time delivery to several leading e-commerce companies.

Manipulation and Measures

After reading the scenario, the participants were introduced to the perspective-taking manipulation. We used the same shareholder perspective-taking manipulation as in Experiment 1, but adapted the victim perspective-taking manipulation to the new scenario. Specifically, the victim perspective-taking manipulation involved taking the perspective of someone who may become a victim of identity theft due to the chatbot technology's vulnerability. We used the same procedures and measures in Experiment 1 for Experiment 2.

Results

Manipulation Check and Descriptive Statistics

Consistent with Experiment 1, we examined the mean value of the manipulation check question for each treatment group. The mean value was 6.51 (n = 41, SD = .71) for the victim perspective-taking treatment group and 6.12 (n = 43, SD = .66) for the shareholder perspective-taking treatment group, indicating that our manipulation was effective. Table 3 shows the descriptive statistics and reliabilities for Experiment 2's main constructs.

Hypotheses Testing

We ran Model 14 in Hayes' [24] PROCESS macro with 10,000 bootstrap samples to test the hypotheses (results shown in Figure 4). Consistent with Experiment 1, we found support for Hypothesis 1: taking the victim's perspective led to less willingness to launch the product as scheduled ($\beta = -.70$, $t = -2.24$, $p < .05$) than taking the stakeholder's perspective. Product managers who took the victim's perspective

Table 3. Descriptive Statistics and Reliability of Constructs (Experiment 2)

	Variable	M	SD	Cronbach's α	1	2	3	4
1	Perspective-Taking[a]	–	–	–	–			
2	Willingness to Launch[b]	4.17	1.85	.92	−.37**	–		
3	Anticipated Guilt	4.04	1.89	.97	.31**	−.68**	–	
4	Customer Orientation[c]	5.85	1.03	.90	.40	.40	.07	–

Notes: [a]Experimentally manipulated between-subject variable (We coded the shareholder perspective as 0 and the victim perspective as 1).
[b]The mean Willingness to Launch was 4.83 for the shareholder treatment group and 3.48 for the victim treatment group.
[c]Consistent with Experiment 1, the fourth item measuring Customer Orientation was excluded from analyses due to low loadings in the factor analysis (see online Appendix E for details).
**$p < .01$.

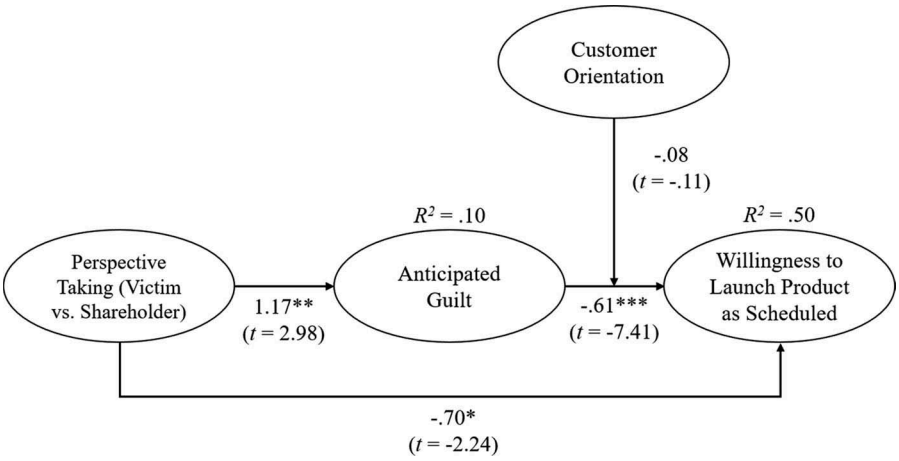

Figure 4. Path analysis results of Experiment 2.
*$p < .05$. ** $p < .01$. ***$p < .001$.

experienced stronger anticipated guilt (β = −1.17, t = −2.98, p < .01), which was negatively associated with willingness to launch (β = −.61, t = −7.41, p < .001). However, the moderating effect of customer orientation on the relationship between anticipated guilt and willingness to launch was insignificant (β = −.08, t = −.11, p > .05). Overall, the model explained approximately 10% of the variance in anticipated guilt (R^2 = .10, F(1, 82) = 8.85, p < .01) and 58% in willingness to launch (R^2 = .50, F(4, 79) = 19.78, p < .001).

To test Hypothesis 2 and Hypothesis 3, we examined perspective-taking's direct and indirect effects on willingness to launch (see Table 4). The direct effect on willingness to launch and the conditional indirect effects at three different customer-orientation levels (Mean and ± 1SD) were all significant; that is, the BCCIs did not include zero. Hence, we found support for H2 as the results indicated partial mediation. However, we did not find support for H3: the index of moderated mediation was insignificant, as

Table 4. Direct Effect and Conditional Indirect Effects of Perspective-Taking

Perspective-Taking		Effect	*SE*	Lower-level BCCI[1]	Upper-level BCCI[a]
Direct Effect		−.70	.31	−1.32	−.08
Conditional Indirect Effects	High Customer Orientation	−.81	.28	−1.39	−.30
	Mean Customer Orientation	−.71	.25	−1.25	−.26
	Low Customer Orientation	§.62	.25	−1.20	−.20

[a]BCCI = bias-controlled 95% confidence interval.

the BCCI did not include zero (index = −.09, SE = .87, Lower-level BCCI = −.31, Upper-level BCCI = .05). Although the results suggest that the indirect effects were significant—and became stronger when product managers were more customer-oriented—the difference in these indirect effects were not statistically significant, as the insignificant index of moderated mediation showed [24].

Discussion

Theoretical Implications

Our study contributes to the existing body of knowledge on de-escalation of commitment in several ways. First, we propose a new tactic that can achieve de-escalation in the context of launching a product with known software defects. While some of the key drivers of escalation of commitment (e.g., self-justification) are egocentric [62], none of the de-escalation tactics known in the literature attempt to directly break the decision maker's egocentric thinking. Furthermore, some existing de-escalation tactics tend to be costly and difficult to implement (e.g., a change in top management). In this regard, we believe perspective-taking has potential to become an effective and easy-to-implement psychological tactic that can induce de-escalation of commitment by breaking decision makers' egocentric thinking. Our study is also the first to investigate de-escalation of commitment in the context of launching a product with known software defects. Our study's findings may appear to contradict those of Gunia et al.'s [22] study, in which taking the perspective of the initial decision maker (responsible for negative outcomes) can actually lead a subsequent decision maker to escalate commitment to a failing course of action. However, our study underscores the importance of identifying an *appropriate* target perspective (e.g., that of the victim) to induce de-escalation of commitment. This is consistent with prior research on perspective-taking, which shows that different target perspectives can lead to different outcomes (e.g., [19]).

A second important finding of our study is the mechanism by which perspective-taking promotes de-escalation of commitment. Prior research has shown that perspective-taking causes changes in peoples' empathy, which subsequently leads to changes in attitudes [6] or behaviors [14]. Our study provides fresh empirical support that this affect-based mechanism through which perspective-taking operates can be further extended to different contexts and a different emotion. In our study's context, perspective-taking was found to cause anticipated guilt, which then led to de-escalation of commitment. Perspective-taking can shift a person's viewpoint on impending threats to the viewpoint of someone else; in our case, by shifting to the victim's perspective, product managers focused on the potential harm of launching a product as scheduled and thereby averted egocentric thinking. When the behavior that remedies the threat to others (i.e., delaying the software product launch) conflicts with escalation behavior (i.e., launching the software product as scheduled), product managers experience greater anticipated guilt. Such feelings signal that

launching the product as scheduled ought to be avoided, thereby promoting de-escalation of commitment.

While investigating the perspective-taking mechanism, we identified anticipated guilt as an emotion that can help de-escalate commitment. In recent years, researchers have begun examining the role of emotions in promoting de-escalation of commitment, but with a limited focus on regret [36], and anticipated guilt's influence on de-escalation decisions has not been studied at all. Our study contributes to this line of research by showing that anticipated guilt can bring about de-escalation of commitment. Furthermore, we extend existing studies on emotions and de-escalation by suggesting a practical way of inducing anticipated emotions. Prior research on the impact of emotions on de-escalation decisions has been quite limited and falls short of suggesting practical ways to induce such emotions in the workplace. Our study demonstrates that perspective-taking can be an effective method of inducing emotions in software product launch situations. Perspective-taking, which strengthens the connection between self and others, can be useful in organizational settings because it is particularly effective in arousing anticipated guilt, an emotion experienced in interpersonal contexts. In this sense, it is a more practical emotion to use to trigger de-escalation in organizational settings, as other emotions (e.g., regret) are not specific to interpersonal contexts and can arise internally without reference to other people [66].

A third important finding is that using perspective-taking to promote de-escalation behavior can be effective in different product launch contexts, where a software defect's negative consequences can vary in severity. In experiments 1 (life-threatening consequence) and 2 (identity theft), we found that the direct and indirect effects of perspective-taking on de-escalation were consistent, thus demonstrating the generalizability of our findings. Furthermore, in both experiments, participants experienced anticipated guilt (through perspective-taking) of sufficient strength to de-escalate their commitment to an original launch date; thus, our second experiment showed that perspective-taking was an effective tactic even when the software defect's consequences were not very severe. These findings are also consistent with prior research on anticipated guilt, which found that it is useful in promoting desired behaviors in a variety of contexts (e.g., [44]).

Finally, our study offers new insights into the role of customer orientation in the context of launching a product with known software defects. Specifically, we found that, when the negative consequences associated with software defects are severe, customer orientation moderates the indirect effect of perspective-taking on de-escalation (Experiment 1). In contrast, we did not observe the same moderated mediation effect when the negative consequences are less severe (Experiment 2). These findings suggest that customer orientation may be more important in contexts involving potentially life-threatening consequences arising from software defects.

Practical Implications

In the quest to commercialize products that involve software, product managers sometimes choose to launch a product as scheduled despite software defects and

their possible negative consequences. Such decisions are critical because launching a defective software product can cause a customer backlash and ultimately lead to both significant business losses and legal liabilities.

Against this backdrop, our study suggests a simple psychological tactic to break or reduce egocentric thinking: perspective-taking, which organizations can use to help product managers de-escalate their commitment to an original product launch date. Furthermore, perspective-taking tactic can be implemented much more easily than most—if not all—of the previously proposed de-escalation tactics, which can cause significant disruption within an organization (as in the case of replacing top-management [34]). However, caution must be taken because perspective-taking's effectiveness in promoting de-escalation depends on the target perspective. Our findings suggest that product users who may be negatively influenced by launching a product with software defects may be the best perspective-taking target for promoting de-escalation.

In addition, our study's findings suggest that managers should recognize how to use anticipated guilt in a positive way. Although the experiences of negative emotions (e.g., shame) should be generally avoided in the workplace due to their adverse impact on attitude, behavior, and performance, anticipated guilt can be used productively as it can help reduce undesirable behaviors [9, 21]. Our study showed that anticipated guilt can bring about de-escalation of commitment. One of guilt's powerful aspects is that it can be anticipatory—that is, negative outcomes that induce such guilt can be imaginary. When product managers face the dilemma of whether or not to launch a product with known software defects as scheduled, they can engage in perspective-taking to put themselves in the place of someone who might be negatively affected by the launch decision. Other managers, colleagues, or team members could also advise product managers to use perspective-taking in these situations. Doing so may cause the product managers to experience anticipated guilt, thus helping them de-escalate commitment to the product launch date.

Finally, our results suggest that the degree of customer orientation exhibited by product managers can enhance the impact of perspective-taking on de-escalation decisions by strengthening anticipated guilt's effect, especially when the negative consequence of launching a product with software defects is severe. Although employee customer orientation is viewed as a stable trait of individuals, research suggests that it can be influenced by organization/team cultures or one's superior [72]. Fostering an organizational culture or a team environment that puts customers' interests first may support the strengthening of product managers' customer orientation, which may further support de-escalation by amplifying the effect of anticipated guilt using perspective-taking.

Limitations and Directions for Future Research

Like any other research, this study is not without limitations. The first limitation relates to the type of experimental approach we used. To investigate the relationship

between perspective-taking and de-escalation, we conducted a scenario-based laboratory experiment, which is typically the method of choice in studies investigating escalation and de-escalation of commitment. Although this approach limits our capability to capture all of the complex dynamics in escalation situations, it lets us test and extend theory by examining the causal relationships in our model. Hence, we believe that our study contributes meaningful insights regarding the relationships between perspective-taking, emotions, and de-escalation in the context of launching software products with defects.

A second study limitation is its narrow focus on customer orientation as a factor that captures individual differences. Our study demonstrated that product managers' degree of customer orientation represents an individual-differences variable that can be important when launching a software product with defects that may have severe negative consequences. However, other factors reflecting individual differences might also influence perspective-taking and anticipated guilt, including the perspective-taking ability itself. Prior research on perspective-taking suggests that individuals differ in their capacity to understand another's viewpoint, which could influence the outcomes of perspective-taking [18]. For example, individuals with greater perspective-taking ability may perceive the impending threat toward others more seriously and therefore experience greater anticipated guilt.

Another individual difference factor to consider is guilt-proneness. Guilt-proneness is an individual trait that indicates one's "propensity to experience guilt" [13, p. 947]. Leith and Baumeister [43] found that guilt-prone people not only demonstrated a higher tendency to engage in perspective-taking but also greater ability in terms of adopting another's perspective. We thus expect that guilt-prone people may experience greater anticipated guilt when using perspective-taking to promote de-escalation of commitment. One future research direction would involve considering individual differences in perspective-taking abilities and guilt-proneness, which might offer a more nuanced understanding of how perspective-taking works as a de-escalation tactic in the context of launching software products with known defects.

Our study was limited to two different perspectives (i.e., victim vs. shareholder), but there are obviously other perspectives that could be investigated. More importantly, while we found that perspective-taking's effect on de-escalation can differ depending on the target perspective, we did not examine *who* would be in the best position to suggest taking another person's perspective. Research on advice-giving and advice-taking may provide additional insights into this matter. Studies in this research stream have found that "egocentric advice discounting" commonly occurs when individuals receive advice from others [11, p. 129]. This literature holds that advice-takers do not follow the advice of advice-givers to the extent they should because they believe their own opinion is superior to that of the advice-giver (i.e., egocentric bias) [35] or they believe that the advice-giver lacks task-relevant knowledge or expertise [68]. Such beliefs can weaken the influence of perspective-taking. Because decision makers can be egocentric in escalation situations, an interesting avenue for future research would be to investigate the degree to which egocentric

discounting occurs when using perspective-taking as a de-escalation tactic and, if it is a factor, to identify who would be in the best position to suggest perspective-taking for attenuating such discounting.

Conclusion

Although the literature suggests several de-escalation tactics for reducing the need to defend one's ego, most tactics focus on de-escalation's cognitive aspects rather than attempting to break the decision maker's egocentric thinking. Furthermore, a minimal amount of attention has been paid to de-escalation tactics that could be useful in the context of launching software products with defects. In this study, we contribute to the literature by proposing perspective-taking as a new de-escalation tactic that could be used in these contexts. Our results show that de-escalation can be promoted when product managers take the perspective of someone who might be negatively affected by launching a software product with known defects. We also found that anticipated guilt meditated the relationship between perspective-taking and de-escalation. Furthermore, the product manager's customer orientation was found to moderate this mediation relationship, but only when the negative consequence of launching a software product with known defects was severe. Overall, our study advances de-escalation research by demonstrating that perspective-taking can be a practical, emotion-based tactic for addressing the problem of adherence to an original product launch date in the face of negative feedback.

Notes

Software quality is often considered "negotiable" [3] in agile software development settings, and releasing the first version of software as early as possible can be used as a strategy. Our study, however, focuses on instances in which product managers choose to launch a software product with known defects as originally scheduled due to their commitment to the launch date rather than as a strategy.

For a detailed review on the core theories of escalation of commitment, see the work of Sleesman et al. [62, 63].

An earlier version of this paper was presented at the 2014 International Conference on Information Systems [42]. Although the current paper focuses on comparing the perspective of a victim versus that of a shareholder, in an experiment reported in the earlier version of this paper, we found that taking a victim's perspective has a significant effect on de-escalation relative to no perspective-taking (i.e., product manager's own perspective).

We thank the members of our review panel who suggested that we investigate whether the results we obtained in the experiment with severe consequences would generalize to a situation in which consequences were less severe.

We worked with Qualtrics to identify and recruit product managers in the IT industry to take part in our study. Invitation e-mails were sent to those identified, along with a link to visit a website that hosted the experimental materials.

We tested whether demographic information—age, gender, overall work experience, product management experience, and IT-related work experience—had significant effects on de-escalation in either experiment and found that they did not. We therefore do not include them in our analyses.

Due to perspective-taking being coded as a binary variable (i.e., shareholder perspective as 0 and victim perspective as 1), we do not generate the interaction plot using the mean value

of perspective-taking as it would have no meaning. Instead, we show the patterns of interaction between customer orientation and anticipated guilt for the *victim* perspective. Note that the main difference between shareholder and victim perspective is that the degree of willingness to launch is higher in the shareholder group (i.e., the intercept)—the interaction patterns (i.e., slopes) are identical in both perspective groups.

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