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Journal

Academy of Management Journal, 45(2)

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Publication Date

2002

Peer reviewed

BANKING ON COMMITMENT: INTENDED AND UNINTENDED CONSEQUENCES OF AN ORGANIZATION'S ATTEMPT TO ATTENUATE ESCALATION OF COMMITMENT

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Examining commercial lending decisions, we found that increased monitoring of decision makers and changing decision makers attenuated escalation of commitment but also produced unintended effects. Some decision makers resisted downgrading the risk of borrowers in the face of organizational intervention, exhibiting "intervention avoidance," and escalated commitment to these borrowers. Combined findings indicate organizations need to carefully address both the intended and potential unintended consequences of systems designed to attenuate escalation of commitment.

Escalation of commitment has generated sustained interest among organizational researchers over the past quarter century. The notion that decision makers tend to incorrectly consider previous expenditures when deliberating current utility-based decisions (Arkes & Blumer, 1985) has been used to explain fiascos ranging from the prolonged involvement of the United States in the Vietnam War to the disastrous cost overrun during the construction of the Shoreham Nuclear Power Plant (Ross & Staw, 1993). In the Shoreham Nuclear Power Plant example, escalation of commitment meant billions of wasted dollars (Ross & Staw, 1993). In the Vietnam War, it may have cost thousands of lives.

When a decision maker has invested in a course of action (or project) and the project starts to go poorly, the decision maker can respond in various ways. In some cases, additional expenditures may be rationally justified. If, after sunk costs have been ignored, it appears additional investment has positive expected value (the expected return from continued investment exceeds the expected return from ceasing investment), then increased expenditures can be viewed as rational (Northcraft & Neale, 1986; Northcraft & Wolf, 1984). However, and of more behavioral interest, decision makers often respond in ways that appear inappropriate.

Inappropriate responses can include unwarranted increased investment in a project, called escalation of commitment in the literature; inappropriate persistence in the project beyond the point when a rational analysis would recommend exit; and refusal to acknowledge that the project has deteriorated. The first two of these types of "undesirable decision commitment" have been extensively studied, but the third has received less examination.

Building from Staw's (1976) seminal piece, many researchers have looked for clear evidence of escalation, focusing on the existence of an absolute increase in investment of organizational resources to a failing course of action (e.g., Staw & Hoang, 1995; Teger, 1980; Whyte, 1986). For example, Staw (1976) asked respondents for dollar amounts they would invest, and Staw and Hoang (1995) looked at the total playing time of National Basketball Association players who were high draft picks after controlling for on-court performance.

Other researchers have focused on the related, but distinct, behavior of commitment persistence in which individuals excessively continue to pursue a failing course of action over time (e.g., Brockner, Rubin, & Lang; 1981; Conlon & Garland, 1993; Garland & Conlon, 1998; Garland, Sandefur, & Rogers, 1990; Moon, 2001a). For example, Garland and colleagues (1993) tested how many times individuals would continue to hypothetically keep drilling for oil on a leased property after failure, and Moon

We would like to thank Don Conlon and two anonymous reviewers for their helpful comments.

(2001a) looked at the degree to which both sunk costs and proximity to completion impacted the likelihood a decision maker would continue funding a dubious project.

Although most researchers have focused on the causes of undesirable decision commitment (escalation and/or persistence behavior), recently some have explored factors that may attenuate these behaviors. Two recent publications have tested mechanisms that may help eliminate undesirable decision commitment and allow managers to reduce their commitment to failing courses of action (termed here *de-escalation*). Kirby and Davis's (1998) experimental study showed that increased monitoring could dampen the escalation of commitment. Staw, Barsade, and Koput's (1997) field data on the banking industry led them to conclude that top manager turnover led to de-escalation of commitment at an aggregate level.

The third response that decision makers could have to deteriorating courses of action, refusal to acknowledge a project's deterioration, has not been extensively studied. Both casual observation and extant theory suggest such refusal may be common. The saying "looking through rose-colored glasses" comes to mind. People with medical conditions often refuse to acknowledge the seriousness of their conditions (Kreitler, 1999; Moyer & Levine, 1998). In the Vietnam War, some analysts claimed that "victory was just around the corner" (McNamara & VanDeMark, 1995). Auditing exists in part to force companies to reveal deterioration in their financial conditions (Levinthal & Fichman, 1988). This behavior may reflect "anchoring effects," whereby a prior evaluation of a project serves as a strong subconscious anchor on a decision maker's current evaluation of the situation (Tversky & Kahneman, 1974); or conscious effort on the part of decision makers to justify their actions (Tetlock, 1992); or motivated misperception, in the cognitive dissonance tradition (Festinger, 1957). In essence, individuals often refuse to "read the writing on the wall" as a consequence of subconscious processes and/or volitional actions.

We brought together these four aspects of commitment research (escalation, persistence, refusal to acknowledge the deterioration of past decisions, and attenuation of undesirable decision commitment) in a study of a bank's decisions on commercial loans. Escalation of commitment and persistence commitment would imply the bank would either increase or maintain credit lines for borrowers despite their deteriorating financial positions. Evidence of factors that would attenuate undesirable decision commitment (a change of decision maker and increased monitoring) appear directly in

our data. Finally, we will argue that refusal to acknowledge deterioration of a borrower's condition should occur most strongly when such acknowledgement will result in undesirable outcomes for the decision makers. In particular, the factors noted as attenuating commitment also reflect poorly on the original decision maker. Consequently, the decision maker may refuse to acknowledge failure of a course of action when such acknowledgement would trigger interventions that reflect poorly on him or her—a behavior we term *intervention avoidance*. Using a sample of commercial loan decisions, we explored the interactions of these four factors.

THEORY AND HYPOTHESES

Given that many diverse studies have demonstrated that decision makers can exhibit undesirable decision commitment (e.g., Arkes & Blumer, 1985; Staw, 1976, 1997), we take it as an assumption. Such commitment could take the form of escalation (increases in commitment) or persistence (maintenance of commitment). Thus, our first hypothesis is:

Hypothesis 1. Deterioration of a situation elicits undesirable decision commitment (persistence, escalation, or both).

Given the apparent ubiquity of undesirable decision commitment (Staw, 1997), it should not be surprising that scholars and practitioners want to know how organizations can limit it. Simonson and Staw (1992) argued that close organizational monitoring of a specific decision increases the vigilance of a decision maker on that decision. In keeping with this logic, they found that experimental subjects tended to de-escalate their commitment when told that others would review their decisions (but see Conlon and Wolf [1980] for contrary findings). Kirby and Davis (1998) also found that increased monitoring caused decision makers to reduce their commitment to losing positions by forcing them to behave in the best interests of their organization. The effect of monitoring on escalation of commitment has not been tested outside the laboratory. Thus, we hypothesize that:

Hypothesis 2. Increases in the level of monitoring lessen undesirable decision commitment (persistence and/or escalation).

Simonson and Staw (1992) also argued that organizations could attenuate escalation of commitment by reducing the self-justification pressure decision makers felt. The decision makers responsible for an original decision may want to justify it (and past expenditures) by trying to make the project

succeed. Changing decision makers can reduce justification pressures. Doing this would effectively reframe (Frisch, 1993) the situation; the new decision maker starts with a clean slate without feeling responsibility for the initial decision. Staw, Barsade, and Koput (1997) tested this argument using corporate data from banks. Examining financial reports, they found that the turnover of senior bank managers led to increases in the provisions for loan losses in a bank's portfolio. They concluded that this action indicated attenuation of commitment to questionable loans. Although indicating that changes in senior personnel influence organization-wide decision policies, their research did not directly test the effects of changing decision makers at the individual decision level of analysis. We extend this work by looking at the individual level of analysis and offer that:

Hypothesis 3. A change in decision maker reduces undesirable decision commitment (persistence and/or escalation).

Unintended Outcomes of Escalation Reduction Efforts

The previous discussion outlined two actions that organizations may take to decrease the likelihood of undesirable decision commitment. Although increased monitoring and changing decision makers may lessen the likelihood of some types of decision commitment, they may also have unintended consequences.

In most of the commitment literature, it is assumed that the signals of deterioration of an investment come clearly and exogenously to a decision maker. However, the decision maker often must decide whether the situation has in fact deteriorated. If decision makers will suffer negative consequences for the deterioration, they may avoid acknowledging it—that is, either avoid seeing it or avoid reporting it. Such avoidance could result in the persistence of overly favorable assessments of the situation.

The decision maker who acknowledges an error may suffer several undesirable outcomes, including increased monitoring and reduced responsibility. Both of these outcomes can be seen as indicating some degree of failure by the decision maker. Thus, they may reflect poorly on her or his self-perception (Moon, 2001b). Furthermore, they may tangibly affect the decision maker's performance assessments and future prospects. Banks, for example, probably do not favor lending officers who regularly make loans that end up as problem loans. If decision makers know that organizational interven-

tions (increased monitoring and loss of responsibility) begin at specific reference points, they may avoid revealing deterioration to such levels. Consequently, decision makers, fearing the consequences, may refuse to acknowledge that projects have deteriorated to the point that increased monitoring or loss of responsibility should occur, thus exhibiting intervention avoidance.

Tetlock (1992) argued that the threat of decision oversight makes decision makers defensive and constricts their cognitive activity when they are asked to reevaluate their decisions. Furthermore, this defensiveness and cognitive constriction often magnify the status quo bias (Tetlock, 1992). Thus, the possibility of organizational interventions pushes decision makers to defend their previous positions. Diagnosing a similar phenomenon, in their threat-rigidity theory Staw, Sandelands, and Dutton (1981) stated that managers react to threats by restricting information processing and increasing control. Both theoretical perspectives suggest that the threat of increased oversight or loss of decision responsibility results in decision makers restricting the processing of information (ignoring negative news) and trying to maintain personal control (avoiding loss of control over a loan). Consequently, we hypothesize that the threat of these organizational interventions increases the likelihood that decision makers will exhibit a decision error by failing to acknowledge that the risk ratings of borrowers should be downgraded.

Hypothesis 4. The threat of increased monitoring increases the likelihood that a decision maker will fail to acknowledge that the risk rating of a borrower should be downgraded.

Hypothesis 5. The threat of loss of responsibility increases the likelihood that a decision maker will fail to acknowledge that the risk rating of a borrower should be downgraded.

METHODS

Data and Analyses

To examine the hypothesized relationships, we used a previously constructed data set on commercial loan decisions made by lending officers within a large midwestern bank (see McNamara & Bromiley, 1997, 1999). This setting provides valuable data on commitment behavior since continuing bank-borrower relationships are longitudinal and can involve changes in both a given borrower's situation (indicated by the risk associated with the borrower) and the bank's financial commitment to the borrower. The data set includes data from all

small-business borrowers who received complete annual credit reviews from the bank's five branches that specialized in commercial lending.

The data came from the bank's annual credit reviews of borrowers. These documents include an evaluation of the current creditworthiness (rated on a scale from 1 to 7, with 1 for the most creditworthy customers); the current credit limits for the borrower; financial reports; and the date on which the relationship with the borrower began. The data set includes loan and financial data for 223 firms. With multiple years of data for each firm available, the data set includes 787 total observations.

We used a *t*-test to test Hypothesis 1 and linear and logistic regression analyses to test the remaining hypotheses. Linear regression was our choice for Hypotheses 2 and 3, since the variable assessing level of investment commitment (described below) is continuous. Logistic regression was used for Hypotheses 4 and 5, since persistent underassessment of risk was measured with a dichotomous variable (described below).

Dependent Variables

We had two dependent variables: the degree of escalation or de-escalation of commitment, and failure to acknowledge that a borrower should be downgraded.

Escalation/de-escalation of commitment refers to changes in level of commitment when the situation (a borrower's creditworthiness) has deteriorated. We first selected all 155 observations in which the borrower's risk rating had been degraded as compared to the prior year. The change in investment commitment was calculated as the percentage change in the borrower's credit limit from the prior credit review to the current one. The credit limit figure included the balances on all outstanding term loans, the approved level on term loans that had not yet been fully exercised, and the limit on the borrower's line of credit. We used credit limit, as opposed to current outstanding balance, since the former directly reflects the commitment of the bank to the borrower, even if the borrower has not yet used the entire commitment. Credit limits differ from loan balances because the credit limit includes the value of approved term loans on which the borrower has not withdrawn the funds (for example, loans for the construction of facilities that are in a design phase) and the unused portion of the borrower's line of credit (which the borrower could draw on without additional bank review). Thus, the percentage change in credit limit reflects the degree to which a bank escalates or de-escalates its com-

mitment since it directly measures changes in the potential loss exposure of the bank.

To identify situations in which the lending officer failed to acknowledge that a borrower should have been downgraded, we focused on underassessment of the risk of a borrower—that is, situations in which the decision maker avoided acknowledging that the present course of action was failing. Thus, we needed to first identify times when the bank's assessment of a borrower's risk appeared to be overly favorable. To identify these situations, we developed a model to objectively estimate the risk of borrowers on the same scale as the bank used. Comparing the banker's and the model's assessment of borrower risk allowed us to identify borrowers for whom the banker's risk assessment appeared overly favorable. We then examined whether the banker downgraded the risk rating of these borrowers in the following time period to assess whether or not the decision maker exhibited a persistent underassessment of risk.

The objective model of risk used six financial characteristics of a borrower to predict the borrower's risk level. We estimated the model using ordinal logistic regression analysis. We chose the six financial variables¹ identified in the risk-rating rationale section of the bank's loan review manual. The factors also match up closely with those identified in earlier work on predicting bankruptcy or default risk (e.g., Altman, 1968, 1984).

Using parameter estimates from the logistic regression equations, we predicted the risk of all of the borrowers and found that the model predicted the exact rating assigned by the bankers 49 percent of the time. This percentage significantly exceeds the 20 percent that would result by chance ($p < .01$). Further, when the model's and the bank's ratings differed, and the bank had changed its rating within two years (150 observations), the bank moved the rating in the direction of the model 84 percent of the time (126 observations). When the bank's ratings disagreed with the model's, the bank moved its rating toward the model's most of the time (as determined by a binomial test, the probability of moving toward the model is 50 percent, at $p < .01$). Thus, the model appeared to both reason-

¹ The variables used in this model were profit before interest and the ratio of taxes to total assets, measuring profitability; cash flow after debt amortization to total assets, which measures cash flow; current ratio, which measures liquidity; net worth to total assets, which measures leverage; net working capital to total assets, which measures what bankers refer to as collateral margin, which serves as an indicator of marketable collateral; and the logarithm of total assets, which measures firm size.

ably match the bank's risk assessment schemata and potentially identify numerous borrowers for whom the bank's assessment may have been in error.

We used a categorical variable to classify whether or not an observation reflected persistent underassessment of risk. Of the 787 observations, 219 had a lending officer (actual) rating of the borrower that was more favorable than the model's. Among these 219 observations, the borrower's risk assessment was not downgraded in the following time period 167 times. We categorized these 167 observations as situations in which the decision maker persistently underassessed the borrower's risk. The remaining 52 observations were coded as not exhibiting this persistent underassessment. An additional analysis in which we measured whether or not the lending officer underassessed borrower risk in a single time period produced similar results.

Independent Variables

Monitoring. As noted, the bank rated creditworthiness on a seven-point scale. When borrowers moved from risk level 4 or better to either an "early warning 4" or risk level 5, their loans moved to the bank's "watch list," and monitoring of the lending officers substantially increased. Branch managers took an interest in borrowers on the watch list because loan portfolio degradation can significantly affect branch performance (McNamara & Bromiley, 1999) and, subsequently, the managers' evaluations. Additionally, senior corporate managers at the bank received a monthly report that identified all watch-listed loans. Consequently, lending officers faced higher levels of monitoring from multiple levels of management for borrowers at early watch 4 or level 5 risk than for those at lower risk levels.

We used dummy variables to code an increase in monitoring. In Hypothesis 2, we predict increased monitoring will reduce undesirable decision commitments. Since the bank monitors loans above risk level 4 more heavily than it monitors those below, the actual monitoring dummy variable took on the value 0 for all borrowers at risk level 4 or lower and a 1 for the early watch 4 risk level or higher.

Hypothesis 4 predicts lending officers will be more likely to fail to acknowledge that the risk rating of a borrower should be downgraded when a decline in its risk rating would trigger increased monitoring. Consequently, we constructed an indicator variable that identified borrowers that faced additional managerial oversight if they were downgraded. The variable for threat of additional monitoring equaled 1 for all borrowers currently at risk

level 4, since any degrading in these borrowers' risk ratings would have led to greater monitoring. All other borrowers were coded as 0.

Change in decision responsibility. When borrower risk increased to risk level 6 or higher, the management of a loan transferred from the originating bank branch to the bank's "loan support team." This office specialized in the management of troubled borrower relationships. Hypothesis 3 involves change in level of commitment after decision responsibility shifts. Since the responsibility for the management of the lending relationship transfers from the originating branch to the loan support team, we coded the variable assessing change in responsibility as 1 for all borrowers that moved to risk levels 6 or 7 from risk level 5 or lower. All other borrowers were coded as 0.

Hypothesis 5 concerns threatened change in responsibility. Consequently, we coded the variable for a threat of additional monitoring as 1 for all borrowers currently at risk level 5, since any degradation in these borrowers' risk ratings would result in a change in decision management responsibility. All other borrowers were coded as 0.

Control variables. Our analysis included four control variables. Two reflected borrower relationship characteristics that might influence the behavior of decision makers within the bank. We measured the duration of the relationship to control for the possibility that relationships between borrowers and the bank systematically changed with duration (Van de Ven & Walker, 1984; Levinthal & Fichman, 1988). The prior size of loan commitment was a control for possible effects of loan size on the level of commitment of the lending officer and the level of within-branch oversight.

We also included two variables to control for branch-level factors that might influence risk assessment. The previous performance of a branch, measured as net income divided by portfolio size, was a control for the possibility that the performance of a branch influenced the corporate oversight it received. Branch size, measured as loan portfolio size in millions of dollars, allowed us to control for the possibility that size influenced the level of bureaucratization of decision processes.

RESULTS

Table 1, which reports means, standard deviations, and correlations, shows no surprising relations between variables. In our regression analysis, we tested for evidence of serial correlation, multicollinearity, and heteroskedasticity in the data and found no problems.

Hypothesis 1 proposes that bank decision makers

TABLE 1
Descriptive Statistics and Correlations

Variables	Mean	s.d.	1	2	3	4	5	6
1. Percent change in credit limit	-5.89	29.80						
2. Change in monitoring	0.73	0.45	-.41**					
3. Change in decision responsibility	0.28	0.45	-.39**	.38**				
4. Duration of relationship	13.96	15.84	.24**	-.27**	-.15			
5. Prior commitment size	1.32	1.60	-.13	.05	-.10	.05		
6. Prior branch performance	1.40	1.11	.26**	-.03	-.14	-.01	.03	
7. Size of branch	81.65	21.94	.08	-.03	-.20**	-.18*	.07	.32**

$n = 155$.

* $p < .05$

** $p < .01$

will exhibit undesirable decision commitment. We found evidence of escalation: borrowers who had received downgraded risk ratings but did not yet face increased monitoring or change in decision responsibility received significant increases in their credit limits ($\bar{x} = 13.9\%$, $t = 3.07$, $p < .01$). We also compared these changes in credit limits for downgraded borrowers (who had not had monitoring or decision responsibility changes) to the changes for borrowers with unchanged risk ratings. Recently downgraded loans had larger increases in credit limits than stable loans (13.9% and 9.5%, respectively), although the difference was not statistically significant ($t = 0.92$, $p = .36$). Although the mean changes suggest escalation, we cannot reject the possibility the lending officers treated stable and deteriorating borrowers alike. However, the results do demonstrate that the lending officers did not constrict credit to deteriorating borrowers, but instead increased it, consistent with escalation of commitment.

Table 2 presents the results of the two main analyses. Table 3 presents the mean changes in credit line for borrowers whose risk rating had been downgraded.

The results for the control variables generally agree with our expectations. Most notably, as the duration of the relationship with a borrower increased, both the level of investment commitment and risk underassessment increased. In addition, the size of the prior commitment associated negatively with the percent change in investment commitment, suggesting that the increased monitoring associated with larger relationships decreased the incentive or ability to escalate commitment. Prior branch performance positively influenced escalation of commitment; with high performance branches may face less pressure to manage carefully. We tested the hypothesis that the variables of theoretical interest all had parameters equal to 0 and rejected it in both models. For the linear re-

gression on investment commitment, the incremental F -value for the hypothesized variables is 19.51 ($p < .01$, incremental adjusted R^2 of .16). For the logistic regression analysis, the incremental chi-square statistic is 9.58 ($p < .01$).

In Hypothesis 2, we argue that increased monitoring leads to significant decreases in the commitment of financial resources to downgraded borrowers. Consistent with this hypothesis, having just moved from risk level 4 or better to either early warning 4 or risk level 5 lowered the bank's investment commitment; the parameter estimate for

TABLE 2
Results of Regression Analyses: Determinants of Commitment^a

Independent Variables	Persistent Underassessment of Risk	
	Investment Commitment	
Intercept	-8.56** (2.08)	1.58** (0.23)
Change in monitoring	-8.02** (2.15)	
Change in decision responsibility	-8.29** (2.34)	
Threat of change in monitoring		0.47** (0.19)
Threat of change in responsibility		0.50* (0.26)
Duration of relationship	4.43* (2.12)	1.21** (0.36)
Prior size of commitment	-4.41* (1.93)	-0.18 (0.17)
Prior branch performance	7.18** (2.08)	-0.11 (0.18)
Size of the branch	2.16 (2.49)	-0.63** (0.22)
Adjusted R^2	.31	
F	12.47**	
χ^2		36.61**
n	155	219

^a Values are linear regression coefficients for investment commitment and logistic regression coefficients for persistent underassessment.

Standard errors are in parentheses.

* $p < .05$

** $p < .01$

TABLE 3
Mean Percent Change in Investment Commitment
for Observations that Recently Received a
Risk Downgrade

New Risk Level	Number of Borrowers	Mean Percent Change	F ^a
4	43	13.89	
Early warning 4	29	-10.44	14.03**
5	47	-5.65	0.68
6	24	-24.98	8.64**
7	10	-34.25	0.95

^a Comparing level of change to previous risk level.

* $p < .05$

** $p < .01$

change in monitoring is -8.02 ($p < .01$, first column of Table 2). The change in commitment for borrowers that faced higher monitoring was significantly lower than that for borrowers whose risk had increased but who had remained in one of the acceptable risk categories. As can be seen in Table 3, borrowers that moved to risk level early watch 4 had a mean change in commitment of -10.4 percent, and borrowers that moved to risk level 5 had a mean change in commitment of -5.7 percent. Interestingly, although increased monitoring did appear to attenuate escalation of commitment ($t = 2.65$, $p < .01$), the change in commitment did not appear to depend on the ending risk level, since the change in commitment for borrowers that remained at risk level 4 but received the early warning designation did not differ significantly from the change for borrowers that downgraded to risk level 5 ($F = 0.68$, $p = .41$). Thus, the effect of change in commitment appears to relate to the change in monitoring as opposed to the ending risk level (see Table 3, column 4).

Hypothesis 3 argues that changing decision responsibility reduces undesirable decision commitment. Consistent with this hypothesis, the dummy variable for change in responsibility has a negative and statistically significant parameter estimate (-8.3 , $p < .01$). Further, the results in Table 3 show substantial attenuation of escalation of commitment to borrowers that had moved to risk level 6 or 7 (mean changes in commitment of -25 and -34 percent, $t = 6.41$, $p < .01$). As with monitoring, although the change in decision responsibility attenuated escalation of commitment, the mean changes in commitment for borrowers downgraded to risk level 6 and those downgraded to risk level 7 do not differ significantly ($F = 0.95$, $p = .34$). Again, this pattern of findings suggests that the reduction in commitment relates more closely to

the change in decision authority than the ending risk level (see Table 3, column 4). Thus, these findings support the contention that changes in decision responsibility lead to the de-escalation of commitment. Combined, the findings related to the organizational interventions suggest that the change in commitment reflects a step function, with commitment decreasing with the organizational interventions but the level of change in commitment essentially equivalent across risk levels that engender the same type of organizational intervention.

So far, the results support the efficacy of changes in monitoring and decision responsibility as cures for the escalation of commitment bias. We now turn to the side effects of these treatments. Hypotheses 4 and 5 propose that the threat of increased monitoring and change in management responsibility increase the likelihood of a different form of undesirable decision commitment—the persistent underassessment of borrower risk. The results in column 3 of Table 2 support these hypotheses. Both the threat of increased monitoring and the threat of change in decision responsibility increase the likelihood of persistent underassessment of borrower risk ($.47$, $p < .01$, and $.50$, $p < .05$, respectively). These findings support the view that decision makers are likely to fail to appropriately downgrade a borrower when, by doing so, they avoid an organizational intervention.

We also conducted a post hoc analysis to examine the investment commitment behavior of decision makers when they exhibit intervention avoidance. We examined the change in investment commitment for borrowers whose risk was persistently underassessed and who faced either increased monitoring or change in decision responsibility if the decision makers had admitted that the risk needed downgrading. We found that decision makers did appear to exhibit escalation of commitment to these borrowers. The change in commitment (on average, over 30 percent) is significantly greater than 0 ($t = 2.94$, $p < .01$) and greater than the change in commitment to those borrowers who were correctly assessed as remaining at the same risk level ($t = 2.58$, $p = .01$). Combined, these findings suggest that although the organizational efforts to minimize undesirable decision commitment appeared successful at first glance, the threat of these interventions increased the likelihood that decision makers would persistently give overfavorable assessments of the risk of borrowers. In turn, the lending officers would then escalate their monetary commitment to these riskier borrowers.

DISCUSSION

The results of this study advance the literature pertaining to escalation of commitment in at least two ways. First, the results demonstrate that two methods, both intended to mitigate this decision error, work in a field setting. Increased monitoring and changes in the unit responsible for a specific decision had the desired "first-order" effects of reducing escalation of commitment. The findings concerning monitoring build upon previous research (Kirby & Davis, 1998; Simonson & Staw, 1992) by testing the relations outside of the laboratory. The findings on changing decision maker extend previous research (Staw et al., 1997) by testing the relation at the individual decision level instead of the organizational level of analysis.

Second, this study introduces the concept of intervention avoidance, whereby a decision maker avoids intervention by ignoring deterioration in an investment. In other words, efforts to mitigate the most obvious forms of undesirable decision commitment can produce unintended and undesirable "second-order" effects. Specifically, the threat of increased monitoring and change in responsibility caused decision makers to underestimate borrower risk. This resistance to intervention meant decision makers refused to acknowledge problems with a given borrower. When the financial data indicated a borrower's risk rating needed downgrading, the lending officer tended to avoid acknowledging this need if downgrading the risk rating would increase monitoring or trigger a change in decision responsibility. This avoidance appears to be a critical problem, as the delay in increasing decision monitoring or changing decision maker delayed the organization's response to problem loans, possibly increasing its eventual loss exposure. Potentially more critically, at the same time that bankers refused to acknowledge a borrower's increased risk, they rapidly increased financial commitments to those same borrowers (an average of 30 percent in one year).

To put it simply, if a banker acknowledges deterioration of a borrower and takes moves that lead to increased monitoring or change in decision maker (her or his own replacement), then the bank reduces commitments to the borrower. However, bankers clearly resist acknowledging such deterioration and, while they avoid such acknowledgment, they drastically *escalate* commitment to the borrower.

The combination of success in mitigating undesirable decision commitment and problems with unintended consequences suggests that additional research on processes designed to attenuate this

decision error is needed. Techniques that mitigate undesirable decision commitment threaten a decision maker's ego and perhaps the assessed performance of the individual: additional oversight and taking the decision away from the individual both reflect poorly on him or her. As organizations attempt to reduce undesirable decision commitment, they may need to reduce the threat to decision makers' egos (and perhaps the actual rewards derived) from the changes implemented (Simonson & Staw, 1992). Similarly, Edmondson (1996) argued that organizational actors more readily admit and discuss decision errors in situations in which they feel psychologically safe. Researchers should explore alternative means to combat undesirable decision commitment that pose less threat to decision makers or that mitigate the problems generated by the current techniques.

Furthermore, researchers need to examine the volitional nature of intervention avoidance. Intervention avoidance behavior may result from motivated misperception, impression management, or a combination of both. Thus, future studies could explore whether decision makers subconsciously misinterpret information or instead consciously misrepresent decisions to protect themselves from organizational sanctions.

Finally, although our study examined the refusal to recognize deterioration in a situation where such recognition caused intervention, decision makers may not recognize deterioration in other situations. In many cases, individuals simply adapt their expectations after receipt of new information more slowly than statistical models would recommend. Simple belief in the quality of a project might slow recognition of deterioration. Alternatively, acknowledging deterioration might cause undesirable repercussions other than intervention (such as loss of face or damage to public image or self-image). We examined one mechanism that caused refusal to recognize deterioration (intervention avoidance), but others probably exist.

Overall, our study moves forward from Staw and Ross's concern about "the tendency for laboratory researchers to conceptualize escalation as a simple phenomenon, determined by a small set of unidirectional forces" (1987: 42) by examining commitment behavior in the field. This process led us to distinguish different types of undesirable decision commitment (escalation, persistence, and refusal to acknowledge project deterioration). Furthermore, the data indicated complex relations, whereby factors that controlled escalation and persistence also increased the likelihood that decision makers failed to acknowledge project deterioration, which begot further escalation. Thus, this study repre-

sents a step forward in researchers' understanding of the influence of organizational context on the commitment behavior of decision makers. At the same time, this study highlights the need for additional research to explore the range of decision, relationship, and organizational factors that influence the tendencies of organizational actors to exhibit undesirable decision commitment.

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