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Service Failure and Recovery: The Impact of Relationship Factors on Customer Satisfaction

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This research investigated how customers' relationships with a service organization affect their reactions to service failure and recovery. Our conceptual model proposed that customer-organizational relationships help to shape customers' attributions and expectations when service failures occur. The empirical results showed that customers with higher expectations of relationship continuity had lower service recovery expectations after a service failure and also attributed that failure to a less stable cause. Both the lower recovery expectations and the lower stability attributions were associated with greater satisfaction with the service performance after the recovery. These effects appeared to be key processes by which relationships buffer service organizations when service failures occur.

Keywords: *service failure; attributions; customer relationships*

Even the best service providers produce errors in service delivery. One reason for these failures is the labor-intensive nature of many services, which inevitably leads to more heterogeneous outcomes compared to mechanical

production processes (Berry 1980). Service performance variability and failures also arise from the inseparability of service production and consumption, which prevents quality inspections of most services prior to delivery. Service marketers therefore have a large stake in understanding both the consequences of failure and how to provide an effective recovery, so that they can minimize customer dissatisfaction following a failure and thus retain the customer's business. In this article, we examine how customers' relationships with a service organization can alter their reactions to service failures and recoveries.

Many researchers in services marketing have suggested that the quality of a customer-organization relationship affects customers' responses to service failures (Berry 1995; Goodman, Fichman, Lerch, and Snyder 1995; Kelley and Davis 1994). Some propose that customer relationships provide an important *buffer* to service firms when service failures occur, resulting in less customer dissatisfaction. For example, Berry (1995) suggested that customers may exhibit greater tolerance for failures when service personalization and customization lead to social relationships with the service provider (e.g., regular communications, continuity with the same employee, name recognition, and service augmentation). Similarly, Tax, Brown, and Chandrashekar (1998) found that positive prior service experience mitigated (buffered) the negative effects of poor complaint handling on customer commitment and trust. Other research found that organizations

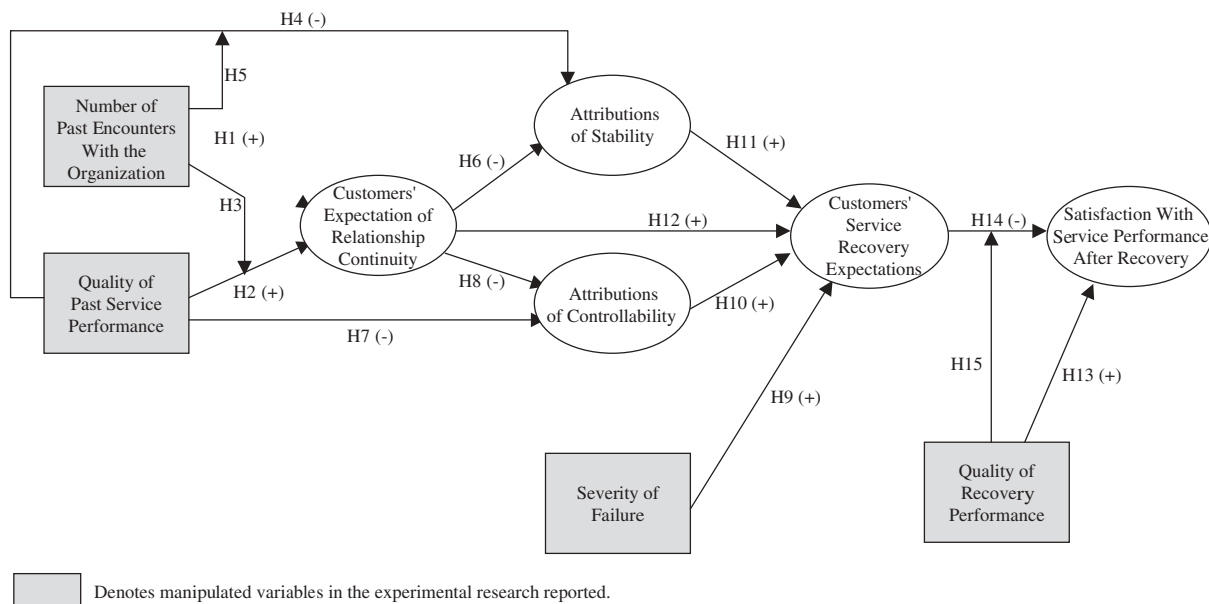
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FIGURE 1
A Conceptual Model of the Impact of Relationship Factors on Customer Satisfaction



that typically deliver high-quality performance are insulated when customers do experience a failure (Anderson and Sullivan 1993; Boulding, Kalra, Staelin, and Zeithaml 1993).

Other researchers, in contrast, have shown that customer relationships can *magnify* the negative customer responses following failures. Goodman et al. (1995) found that dissatisfaction with the service led to greater dissatisfaction with the organization for highly involved customers compared with less involved customers. Kelley and Davis (1994) showed that customers who are committed to a health club possess higher recovery expectations than less committed customers following service failures. In sum, researchers agree about the importance of relationships during service failure and recovery, but they do not present consistent or conclusive findings as to whether relationships serve to *buffer* or *magnify* the negative impact of failures on overall satisfaction. Moreover, until recently (cf. Smith, Bolton, and Wagner 1999; Tax et al. 1998), these studies have not integrated failure and recovery during a single service encounter, a step that may be necessary to understand how relationships ultimately affect customer satisfaction. Finally, the literature has not yet explained the processes underlying these relationship effects.

Thus, in this study, our main focus is in understanding how customer relationships either buffer or magnify the impact of service failures on customer satisfaction. Specifically, we explore how the quality of past service performance, number of past encounters with the organization,

and customers' expectations of relationship continuity affect consumers' responses to failures and recoveries. Among the responses included in our conceptual model are causal attributions and recovery expectations, which may explain the processes underlying the proposed relationship effects. By examining these issues, we hope to learn more about the conditions under which a service organization is more or less vulnerable to the effects of failures.

CONCEPTUAL FRAMEWORK

The conceptual model that we will test with this research is presented in Figure 1. As shown, we propose that both the number of past encounters with the organization and the quality of past service performance affect customers' expectations of relationship continuity. These three constructs, in turn, differentially affect the causal attributions (controllability and stability) that customers generate when service failures occur. Next, the conceptual model proposes that customers' expectations of relationship continuity, stability attributions, controllability attributions, and the severity of the failure affect customers' recovery expectations. Finally, customers' recovery expectations and the quality of recovery performance are expected to influence customers' satisfaction with the service performance after recovery. In the following sections, we define several key constructs and then present specific hypotheses regarding the relationships shown in Figure 1.

Service Failure and Recovery

Our model encompasses both service failures and an organization's efforts to recover from such failures. A *service failure* is defined as service performance that falls below a customer's expectations (Hoffman and Bateson 1997). In this research, these failures occur in the *core service*, which is the basic benefit received by the customer and the primary reason for the service encounter (Levitt 1983). Examples of a core service include the room provided by the hotel and the meal served in a restaurant. *Service recovery* includes the actions and activities that the service organization and its employees perform to "rectify, amend, and restore the loss experienced" by customers from deficiencies in service performance (Bell and Zemke 1987; Gronroos 1988). Examples of recovery efforts include refunds, price discounts, upgraded services, free products or services, apologies, and acknowledgment of the problem (Kelley, Hoffman, and Davis 1993).

Customer-Organization Relationships

Marketers have defined and studied many types and dimensions of customer-organization relationships. Relationships have been characterized in terms of identification (Kelley and Davis 1994), affective commitment (Gruen, Summers, and Acito 2000), resistance to counterpersuasion and adverse expert opinion (Narayandas 1998), and friendship (Price and Arnould 1999). Although social and emotional bonds clearly signal a strong relationship, some researchers suggest that customer-organization relationships can exist without such a high level of affective attachment. They define relationships in terms of past interactions and the expectation of continued future interaction (Bendapudi and Berry 1997; Gutek 1995). For example, as Bendapudi and Berry (1997) stated, "A relationship exists when an individual exchange is assessed not in isolation but, as a continuation of past exchanges likely to continue into the future" (p. 16). Similarly, Oliver (1999) defined relationships in terms of a "commitment to rebuy or repatronize a preferred service consistently in the future." He suggested that these relationships are characterized by cognitive loyalty and a desire for future interactions but do not necessarily include a strong social bond or emotional attachment. It is this latter approach that we take in the current research. Consistent with these authors, we define *customers' expectations of relationship continuity* as customers' commitment to maintain a current relationship with a service organization in the future.

In our model, we propose that expectations of relationship continuity are based on the customer's experience with the organization, which include (1) the quality of past service performance and (2) the number of past encounters with the organization. *Quality of past service performance* refers to the customer's perception of the service

organization's record with respect to the quality of services provided. *Number of past encounters with the organization* refers to the number of previous interactions between the customer and the organization. We chose to conceptualize relationship length in terms of number of encounters rather than elapsed time because the former relates more directly to the customer's knowledge about the service organization, an important issue in later hypotheses. Next, we propose several hypotheses concerning how these constructs relate.

Hypotheses for Relationship History and Expectations of Relationship Continuity

Number of past encounters with the organization. We begin with the premise that a customer's history with a service organization helps to determine his or her intentions to continue a relationship. First, as the number of past service encounters increases for a particular customer, that customer becomes more familiar with the service provider, its offerings, and its processes (Solomon, Surprenant, Czepiel, and Gutman 1985). As a result, this customer perceives less risk when purchasing the service than do customers possessing less experience with the organization. The risk reduction associated with a growing number of encounters should increase the customer's desire to continue the relationship. Channels researchers have also proposed that the tenure of a relationship affects both parties' expectations for relationship continuity (Anderson and Weitz 1989; Ganesan 1994; Lusch and Brown 1996). They argue that over time, members grow increasingly familiar with one another and accept their respective roles and behaviors. On the basis of these arguments, we predict the following:

Hypothesis 1: The number of past encounters with the organization is positively related to customers' expectations of relationship continuity.

Quality of past service performance. Not just the number but also the quality of past service performance should affect consumers' expectations of relationship continuity. Oliver (1980) proposed that satisfaction with past consumption increases expectations of future satisfaction, thus enhancing intentions of future interactions. Both Oliver (1980) and LaBarbera and Mazursky (1983) empirically support this hypothesis. Thus, we propose that higher quality of past service performance raises customers' expectations of relationship continuity.

Hypothesis 2: The quality of past service performance is positively related to customers' expectations of relationship continuity.

Number of Past Encounters With the Organization × Quality of Past Service Performance. Finally, we propose

that the number of past encounters with the organization moderates the effect of the quality of past service performance on customers' expectations of relationship continuity. Customers, who realize that performance of a given service provider can vary across consumption occasions, may be cautious about basing their intentions to continue a relationship with an organization on the quality of a single service experience. However, as the number of past interactions increases, customers should be more confident about basing expectations of relationship continuity on an extrapolation of past performance quality by the organization. Thus, the quality of past service performance should have more impact on customers' expectations of relationship continuity for customers who have had multiple past encounters than for those who have had a single encounter with an organization.

Hypothesis 3: As the number of past encounters with the organization increases, the quality of past service performance has a greater positive effect on customers' expectations of relationship continuity.

In the next section, we examine the processes by which relationship history (number of past encounters with the organization and quality of past service performance) and customers' expectations of relationship continuity influence responses to service failure and recovery. The first process involves causal attributions.

Causal Attributions

Previous research has shown that customers' attributions about the failures that they experience influence their attitudes and behavioral intentions toward the firm (Bitner 1990; Folkes 1984; Folkes, Koletsky, and Graham 1987). We propose that the number of past encounters with the organization and quality of past service performance, along with customers' expectations of relationship continuity, may shape those attributions, which in turn influence the impact of a service failure on customer satisfaction. Weiner (1979) suggested that individuals form attributions along three dimensions: stability, controllability, and locus. *Stability* is the extent to which a cause is viewed as temporary (expected to vary over time) or permanent (expected to persist over time). Failures with stable (enduring) causes should recur more frequently than failures whose causes are not stable. Stability attributions should therefore be important because of their influence on customers' expectations of future service performance (Folkes 1984; Oliver 1997; Weiner 2000).

Next, *controllability* is the degree to which a focal party perceives a cause to be volitional or nonvolitional. This attribution involves the customer's beliefs about whether the service organization could influence or prevent a failure from occurring (Hamilton 1980; Weiner 2000).

Finally, *locus* is defined as whether the cause of a failure is located in the customer or in the service organization. Similar to Bitner (1990), our primary interest is in failures originating within the organization. Because the failures we examine have a locus that is internal to the organization (i.e., external to customer), we restrict our focus to attributions of stability and controllability. In the following section, we introduce several hypotheses related to these attributions.

Hypotheses for Causal Attributions

Stability attributions. We first propose that the quality of past service performance influences attributions of stability. As discussed, a stable cause is one that is enduring rather than temporary. Failures with stable causes are therefore more likely to recur than failures with unstable causes, creating considerable problems for an organization. For example, a restaurant customer may experience long waits for service because the restaurant is chronically understaffed (a stable cause) or because the server is learning how to perform the duties of the job (an unstable cause). Failures with stable causes are therefore obvious targets for problem solving for good service organizations. High-quality service organizations should try to avoid the kind of failures produced by stable causes.

Given this general perspective, does the quality of past service performance influence customers' attributions about the stability of a current failure? Heider (1958) argued that people often use consistency principles to form attributions. Excellent service is consistent with an excellent service organization, while average service is consistent with an average service organization. Compared with an average service organization, an excellent service organization should have less tolerance for stable, hence recurring, failures. Thus, customers who have experienced excellent-quality past service performance are less likely to make stable attributions when a failure occurs, compared with customers who have experienced only average-quality past service performance. This is expected because stable failures are inconsistent with an organization that provides excellent service.

This logic agrees with Weiner (2000), who stated that customers' impressions of product quality are often influenced by previous experiences with the product or service and become "frozen" or not easily altered by current product performance (p. 384). This tendency, he claimed, causes customers to attribute a current failure to unstable (rather than stable) causes when past experiences have been positive. Weiner and Kukla (1970), in an academic achievement context, found that explanations for a student's poor performance on an exam changed from stable to unstable if that student had performed well (rather than poorly) on previous exams. Thus, we hypothesize the following:

Hypothesis 4: The quality of past service performance is negatively related to attributions of stability about the cause of the failure.

We also propose that the number of past encounters with the organization moderates the effect of quality of past service performance on customer attributions. As the number of past encounters with the organization increases, the customer accumulates more evidence about the service organization's performance record and greater confidence about expectations of future service. Thus, we expect that the effect of the quality of past service performance on stability attributions should be greater for customers who have had many past encounters with the organization than for customers who have had a single encounter.

Hypothesis 5: As the number of past encounters with the organization increases, the effect of quality of past service performance on attributions of stability (about the cause of the failure) becomes greater.

In addition, we propose that customers who have higher expectations of relationship continuity will consider the failure to be less stable than will those with lower expectations of relationship continuity. Oliver (1999) stated that customers having cumulatively satisfying experiences are likely to develop positive attitudes toward, and a preference for, the service provider. Customers with higher expectations of relationship continuity should possess more positive attitudes toward the organization than do customers with lower expectations of continuity. Evidence suggests that these positive attitudes can be highly beneficial for organizations (see Narayandas 1998). One possible benefit is that customers may be less likely to attribute failures to stable causes, which is more consistent with both the general positive attitude and the existing intention to continue the relationship. Thus, we hypothesize the following:

Hypothesis 6: Customers' expectations of relationship continuity are negatively related to stability attributions about the cause of the failure.

Controllability attributions. We predict that the quality of past service performance will influence customers' attributions about the controllability of the failure. The better the quality of service has been in the past, the more likely customers are to attribute high levels of competence and effort to the service organization. Weiner (1985) stated that repeated successes on a given task often lead people to infer that a person is highly capable. For example, high academic grades lead others to conclude that a student is intelligent, and an undefeated season leads others to believe that the team is good. When individuals are perceived to be competent and exerting effort, yet fail at a given task, this inconsistency often leads observers to conclude that the

failure was due to bad luck, which the competent individual could not control (Frieze and Weiner 1971; Weiner 1985). Similarly, when a service failure occurs in the context of high-quality past service performance, customers are likely to infer that the organization is highly competent and had little control over the failure, which it would have otherwise avoided.

The same logic implies that higher customers' expectations of relationship continuity also lead to lower attributions of controllability. Customers who expect a future relationship are likely to have greater faith in the capabilities and skills of that organization than those who do not. These beliefs should then lead to attributions that the cause of a failure was less controllable.

Hypothesis 7: The quality of past service performance is negatively related to attributions of controllability about the cause of the failure.

Hypothesis 8: Customers' expectations of relationship continuity are negatively related to attributions of controllability about the cause of the failure.

In the next section, we will discuss our predictions about how customers' expectations of relationship continuity, attributions of controllability and stability, and the severity of the failure influence customers' service recovery expectations. Figure 1 illustrates these relationships within our conceptual model.

Customers' Service Recovery Expectations

Customers' service recovery expectations are customers' beliefs about the level of repair that is appropriate after a service failure (Zeithaml, Berry, and Parasuraman 1993). Because a recovery provided by an organization attempts to compensate a customer for the losses produced by the service failure (Gronroos 1988), a consumer's expectations about appropriate levels of recovery should involve equity judgments. Equity theory proposes that partners in an exchange judge its fairness by comparing the ratio of each partner's investments (inputs) to their rewards (outcomes). A failure can upset the balance between the customer's and service provider's ratios in two ways: by diminishing the customer's outcomes and by lowering the customer's perception of the service provider's inputs. An organization's recovery efforts can compensate for the failure by increasing the customer's perceptions of both the customer's outcomes and the service provider's inputs (see Oliver and Swan 1989). We now apply equity theory to predict how customers' service recovery expectations are influenced by (1) severity of the failure, (2) customers' causal attributions regarding the failure, and (3) customers' expectations of relationship continuity.

Hypotheses for Recovery Expectations

Severity of the failure. We define *severity of the failure* as the magnitude of loss that customers experience due to the failure. Such losses can be either tangible (e.g., a monetary loss) or intangible (e.g., anger, frustration) (Smith et al. 1999). The severity of the failure directly affects customers' outcomes, an element that Oliver and Swan (1989) found to be critical for customers evaluating an exchange. The loss incurred from a severe service failure is greater than the loss from a minor failure, and so a more substantial recovery is needed to restore equity (Goodwin and Ross 1992). Consequently, we predict the following:

Hypothesis 9: The severity of the failure is positively related to customers' service recovery expectations.

Attributions of controllability and stability. We predict that attributions of controllability will be positively related to customers' service recovery expectations. When the cause of a failure is uncontrollable, the failure will occur regardless of the level of the service provider's inputs. For example, we consider a blizzard that causes flight delays to be uncontrollable because no level of airline input can eliminate the cause of the delays. In contrast, when a controllable failure occurs, customers perceive that more input (i.e., effort or skill) on the part of the service provider might have prevented the failure. Thus, customers assume lower service provider inputs for controllable compared with uncontrollable failures, and they therefore expect greater recovery efforts by the service provider in order to restore equity to the exchange. This logic is consistent with research showing that controllable failures create more anger toward the organization (Folkes 1984; Folkes et al. 1987) and a rise in adequate expectations (Zeithaml et al. 1993). Additional support for this relationship is provided by Kelley et al. (1993), who found that recovery strategies seem to be less effective when failures are perceived to be controllable by the organization.

We also propose a positive relationship between stability attributions and customers' service recovery expectations. When customers attribute failures to stable causes, they should expect the organization to be aware of the potential recurrence of such failures and therefore have policies and procedures in place to compensate affected customers. The customers are less likely to expect the organization to give high priority to failures with temporary or unstable causes, which are less likely to be enduring problems. Thus, customers' service recovery expectations should be higher when customers attribute failures to stable rather than unstable causes.

Hypothesis 10: Controllability attributions about the failure are positively related to customers' service recovery expectations.

Hypothesis 11: Stability attributions about the failure are positively related to customers' service recovery expectations.

Customers' expectations of relationship continuity. Following the equity argument, we also predict that high customers' expectations of relationship continuity will lead to greater customers' service recovery expectations than low customers' expectations of relationship continuity. As relationships evolve over time, norms develop between partners concerning appropriate behaviors (Dwyer, Schurr, and Sejo 1987; Solomon et al. 1985). Rousseau and Parks (1992) have suggested that these norms represent informal "contracts" between buyers and sellers based on mutual acceptance. Similarly, we argue that some form of normative contracts develop between customers and service organizations. For example, in exchange for their continued patronage, customers may expect higher inputs from service organizations in terms of keeping promises and delivering high-quality service (Bitner 1995; Gronroos 1990). If service failures occur, these expectations of greater seller inputs translate into higher customers' service recovery expectations in order to restore equity and fulfill the contract. Kelley and Davis (1994) empirically demonstrated that more committed customers had higher expectations for service recovery than less committed customers.

Hypothesis 12: Customers' expectations of relationship continuity are positively related to customers' service recovery expectations.

Effects on Satisfaction With the Service Performance After Recovery

Satisfaction with the service performance after recovery is defined as a customer's affective psychological response based on subjective evaluations of the overall service performance after organizational recovery efforts (Bitner and Hubbert 1994; Oliver 1980). Because a recovery can be conceptualized as another service performance (Oliver 1997), we have applied an expectancy-disconfirmation paradigm to model satisfaction as a function of customers' service recovery expectations and the quality of recovery performance. To simplify the model, we include recovery disconfirmation as a control variable but provide no explicit hypothesis for this well-documented effect (see Smith et al. 1999 for a similar approach).

Quality of recovery performance. The *quality of recovery performance* is the degree of reparation that the service provider offers after a failure has occurred. Regardless of expectations, customers should be more satisfied as the quality of recovery performance improves. Bitner, Booms, and Tetreault (1990) argued that a poor recovery following a service failure provides further evidence of the orga-

nization's incompetence or lack of effort. Such impressions often lead to switching behaviors or intentions to harm the organization (Keaveney 1995). Bitner et al. (1990) found that inadequate recovery from service failure was implicated in almost half of their participants' descriptions of unsatisfactory service experiences, while encounters involving some tangible compensation for customer loss were remembered as highly satisfying despite the initial deficiency in service delivery. We therefore hypothesize a positive relationship between recovery performance and customers' satisfaction with the service performance after recovery.

Customers' service recovery expectations. We also expect a direct, negative effect of customers' service recovery expectations on satisfaction with the service performance. Consistent with the expectancy disconfirmation paradigm, the higher customers' service recovery expectations are, the lower satisfaction with the organization should be at a given level of recovery quality (Oliver 1980; Tse and Wilton 1988). There is significant empirical support for both of these relationships (Churchill and Surprenant 1982; Tse and Wilton 1988), although not in the domain of service recovery. Hence, we hypothesize the following:

Hypothesis 13: The quality of recovery performance is positively related to customers' satisfaction with the service performance after recovery.

Hypothesis 14: Customers' service recovery expectations are negatively related to customers' satisfaction with the service performance after recovery.

Customers' Service Recovery Expectations × Quality of Recovery Performance. Although some previous research has found that interaction effects among expectations, performance, and disconfirmation (i.e., the antecedents of satisfaction) add little explanatory value to the expectancy disconfirmation model (Oliver and DeSarbo 1988), others have argued for further investigation of such effects (Yi 1990). Consequently, we explore an interaction between customers' service recovery expectations and quality of recovery performance in determining customers' satisfaction with the service performance after recovery.

We first propose that customers' service recovery expectations serve as a reference point that determines whether customers frame a specific recovery as a gain (recovery performance that exceeds expectations) or a loss (recovery performance that falls short of expectations). The well-established principle that customers weigh losses more heavily than gains (Kahneman and Tversky 1979) implies that performance below expectations will diminish satisfaction more than performance above expectations will enhance satisfaction. Mittal, Ross, and Baldasare (1998) found this asymmetry in the impact of positive- and negative-attribute performance on satisfac-

tion with automobiles. Thus, customers with high recovery expectations (who should view all but the best recoveries as losses) should experience greater changes in satisfaction between levels of recovery performance than will customers with low recovery expectations (who view a wider range of recoveries as gains).

Hypothesis 15: The quality of recovery performance has a greater impact on customers' satisfaction with the service performance (after recovery) for higher customers' service recovery expectations than for lower service recovery expectations.

Control Variables

Predictions about how customers interpret and respond to failure and recovery are complicated by the fact that personal experience and context help shape their expectations and evaluations. While we make no specific hypotheses about such factors, we measure the following potentially influential variables in order to control for such effects. The first is the *importance of the service performance* to our participants. As service importance increases, so does the magnitude of the gains and losses experienced by customers. Folkes et al. (1987) found that importance was positively related to customers' anger following failures. The second control variable is *typicality of the failure* or the customers' belief that specific failures are a common occurrence within a particular industry. Cadotte, Woodruff, and Jenkins (1987) showed that typicality matters because normative expectations based on a representative group of similar brands affect customer satisfaction with the focal brand. Thus, the typicality or atypicality of a failure may mitigate or enhance the detrimental effects of a failure.

A third control variable, *frequency of consumption of the service*, is the number of previous encounters with all providers within a particular service industry. Zeithaml et al. (1993) suggested that customers with such experience will possess higher expectations. Frequent customers for an industry should also have greater depth of knowledge for judging failures and recoveries and thus may have stronger expectations about both. The fourth control variable is *gender*. Differences in the complaining behavior of men and women (Kolodinsky 1993) may indicate a difference in how each group evaluates those failures. Finally, *recovery disconfirmation*, which we excluded from the formal model for the sake of parsimony, is also included as a control variable for hypotheses dealing with satisfaction with performance after recovery (Hypotheses 13-15). Results of past studies have shown that disconfirmation is a significant predictor of satisfaction (see Smith et al. 1999 for a similar approach).

METHOD

Experimental Design and Procedure

A sample of 346 senior undergraduate business students at a large state university voluntarily completed an in-class pencil-and-paper questionnaire in return for class credit. There are a number of important benefits of role-playing experiments (scenarios). This method allows expensive or difficult manipulations to be more easily operationalized, provides the researcher with control over otherwise unmanageable variables, and facilitates the compression of time by summarizing events that might otherwise unfold over days or weeks (Bitner 1990). In contrast, having customers recall actual service failures and recoveries using a retrospective-type method increases response bias due to memory lapses or rationalization (Smith et al. 1999). These issues are especially problematic for our research, which tries to measure attributions made after failure but before recovery. Reports of actual past failures are more likely to elicit updated attributions that have been affected not just by the failure but also by the recovery. Thus, we believe that the scenario approach is a desirable and valid method for this study.

Participants were randomly assigned to 1 of 24 experimental conditions in a $2 \times 2 \times 2 \times 3$ between-subjects factorial design. The scenario for each condition described a service encounter during which a service failure and recovery occur. The four manipulated variables were (1) severity of failure (severe vs. minor), (2) quality of past service performance (average vs. above average), (3) number of past encounters with the organization (one vs. many past encounters), and (4) quality of recovery performance (excellent vs. average vs. poor). Appendix A contains the exact manipulations used in the study.

The session began with participants reading (1) an explanation of the objectives of the study, (2) a request that they carefully read the hypothetical situation that was described and answer the questions that followed, and (3) a request to read each page and to refrain from skipping ahead. An observer in the room reported that participants did not turn back the pages to reread or change responses. The scenario stated that the service context was a meal in a hypothetical, moderately priced steak restaurant in which the participant was dining with a group of friends. The restaurant setting is familiar given the restaurant patronage patterns of the student respondents, whose expectations should be well established. The description also provided the entree price range, emphasizing that the restaurant was neither an upscale nor a low-priced chain, thus creating more homogeneous service expectations.

The scenario next described the existing relationship between the customer and the restaurant in terms of quality of past service performance and number of past encounters with the organization. Several questions measured the

participant's expectations of relationship continuity with the restaurant. The scenario then described the participant as ordering a steak dinner cooked medium, which a survey of local restaurants had shown to be the most popular choice of steak preparation. Next, participants read about a service failure that involved a steak that was served and asked them to rate their expectations for service recovery. Finally, a description of the restaurant's recovery effort was provided, and the participants were asked to rate their satisfaction with the service performance. Manipulation checks and control variable measures came last. A sample scenario is presented in Appendix A.

Pretests

The design of the experimental manipulations shown in Appendix A required three pretests involving a total of 226 students. The most complex decisions involved the design of the service failures and recoveries. For the failure manipulation, one important objective was to vary the failure's severity while keeping other aspects of that failure as similar as possible. We also wanted to create a strong manipulation of failure severity while avoiding extremes, such as a failure that was too trivial (leading some respondents not to perceive the failure as significant) or catastrophic (leading to atypical responses based on a crisis scenario). Pretest respondents agreed that the chosen failures were realistic and rated them as differing in severity (3.5, 5.6, $t = 10.25$, $p < .01$).

Another pretest objective was to design three realistic recovery scenarios that were clearly ordered from best to worst in terms of quality and that the customer would roughly categorize as poor, average, and excellent. Beginning with a set of 16 recovery descriptions derived from Kelley et al. (1993), we ultimately selected three recovery scenarios that varied the level of compensation and were significantly different in terms of rated quality (1.8, 4.4, and 6.3, $F = 186.04$, $p < .001$). Feedback about the believability of the recovery scenarios was solicited during a group debriefing.

Manipulation Checks

Table 1 shows the results of all manipulation checks, including those in the pretests. The means of all manipulation check measures in Table 1 are significantly different in the desired directions ($p < .01$), indicating successful manipulations. Pretest measures served as the final manipulation checks for two of the manipulated variables (quality of past service performance, severity of the failure). Perdue and Summers (1986) support using pretest manipulation checks if the procedures, instruments, and participants are similar to those of the final study, as they were in this case. The results for these two variables were significantly different ($p < .01$), supporting the manipulation.

Pairwise contrasts of the manipulation checks for the three levels of quality of recovery performance were also significantly different ($p < .01$). However, the rating of the average recovery is considerably closer to the excellent recovery quality rating than to the poor recovery quality rating. This asymmetry raises the issue of whether the recoveries actually fit the intended categories of *poor*, *average*, and *excellent*. Given the pattern of means, the average recovery may be so good that it surpasses typical expectations. However, responses to an open-ended question about what participants would expect to happen after the failure showed that the average recovery, an apology and a properly cooked replacement meal, did not exceed most participants' expectations.¹ We conclude that the recovery manipulations provide the necessary differences in perceived quality.

Measures

Model constructs and control variables. Appendix B shows the scales used for the measured model constructs, the original source for each scale, the items added specifically for this study, and Cronbach's alpha. As shown, Cronbach's alpha for each of our measures exceeds the minimum acceptable criterion (.60) (Malhotra 1993:308). The measures used 7-point Likert-type or semantic differential scales, and their wording reflected the restaurant context. Appendix B also includes scales for two control variables: *typicality of the failure* and *disconfirmation*. Two additional control variables, each measured with a single item, include *frequency of service consumption* ("Approximately how often do you go out for dinner at a restaurant during a given month?") and *importance of the service performance* ("How important is it to you that your steak is prepared exactly as requested?" 1 = *not important*, 7 = *very important*).

Measure development. Item analysis and exploratory factor analysis assessed and purified the measures. We retained items with high loadings on the intended factor and no substantial cross-loading and then assessed unidimensionality with a confirmatory factor analysis (CFA) of the entire set of items. We dropped only two items due to internal inconsistency; these measured satisfaction with the service performance after recovery (Oliver and Swan 1989). To test convergent and discriminant validity, we specified a CFA model with intercorrelated factors, as recommended by Anderson and Gerbing (1988). The overall model fit was determined by examining the Goodness-of-Fit Index (GFI), Comparative Fit Index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Table 2 shows that this CFA model had a GFI of .94, a CFI of .97, an SRMR of .034, and an RMSEA of .04. All of these indicators suggest a strong fit of the model to

TABLE 1
Means of Manipulation Checks
in Pretests and Final Study

Manipulation	Results of Three Pretests ^a	Test Statistic	Final Data Collection	Test Statistic
Number of past encounters with the organization				
One past encounter			3.7	$t = 9.73^{***}$
Many past encounters		5.2		
Quality of past service performance				
Average quality	(3) = 5.1	$t = 6.03^{***}$		
Above-average quality	(3) = 6.0			
Severity of the service failure				
Minor failure	(3) = 3.5	$t = 10.25^{***}$		
Severe failure	(3) = 5.6			
Quality of recovery performance				
Poor recovery performance	(1) = 1.8 (2) = 2.1	(1) $F = 186.04^{***}$	1.8	$F = 432.57^{***}$
Average recovery performance	(1) = 4.4		4.7	
Excellent recovery performance	(1) = 6.3 (2) = 6.1	(2) $F = 175.12^{***}$	5.4	

a. (1) = first pretest, (2) = second pretest, and (3) = third pretest.
*** $p < .01$.

the data in accordance to the criterion established by Browne and Cudeck (1993) and Bentler and Bonett (1980). A final check shows very low modification indexes, suggesting high discriminant validity.

Results

We tested the model in Figure 1 using hierarchical regression analysis. In the first step, we regressed the focal dependent variable on all control variables (e.g., satisfaction on typicality of the failure, gender, importance of service performance, frequency of service consumption, and disconfirmation). In the second step, we regressed the residuals from the previous step on the hypothesized independent variables, with manipulations coded as dummy variables.² Table 3 shows the intercorrelations among constructs, and Table 4 contains the results of these regression analyses. In addition, we tested the goodness of fit for our overall model using a statistic Q derived from the R^2 s of the individual regression models (Pedhazur 1982).³ The closer Q is to 1.0, the better the fit of the model to the data. This calculation produced a value for Q of 0.8125, which indicates a good overall fit of the model to the data.

We began our analysis by running a regression equation with customers' expectations of relationship continuity as the dependent variable and number of past encounters with the organization, quality of past service performance,

TABLE 2
Standardized Measurement Coefficients
Resulting From Confirmatory Factor Analysis

<i>Item Abbreviation</i>	<i>Customers' Expectations of Relationship Continuity</i>	<i>Attributions of Stability</i>	<i>Attributions of Controllability</i>	<i>Customers' Service Recovery Expectations</i>	<i>Satisfaction With the Service Performance After Recovery</i>
ERC1	.82				
ERC2	.44				
ERC3	.78				
ERC4	.76				
STAB1		.61			
STAB2		.60			
STAB3		.63			
STAB4		.61			
CTRL1			.75		
CTRL2			.86		
REC1				.77	
REC2				.64	
REC3				.59	
SAT1					.98
SAT2					.91
SAT3					.94
Variance extracted	.54	.42	.60	.56	.45
Chi-square (<i>df</i>)		157.86 (94)			
Goodness-of-Fit Index		0.94			
Comparative Fit Index		0.97			
Normed Fit Index		0.93			
Standardized root mean square residual		0.04			
Root mean square error of approximation		0.04			

NOTE: The *t*-values associated with all the factor loadings are significant at the $p < .001$ level. Details of the item abbreviations are provided in Appendix B.

TABLE 3
Means, Standard Deviations, and Correlations of all Variables

<i>Variable</i>	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
1. Severity of the failure (severe vs. minor)	0.50	0.50	—									
2. Number of past encounters with the organization (one vs. many)	0.51	0.50	0.01	—								
3. Quality of past service performance (good vs. average)	0.50	0.50	0.00	0.00	—							
4. Quality of service recovery performance (excellent vs. average)	0.34	0.48	-0.01	0.00	0.01	—						
5. Quality of service recovery performance (poor vs. average)	0.32	0.47	-0.01	0.00	0.00	-.50***	—					
6. Customers' expectations of relationship continuity	5.17	0.92	0.06	0.22***	0.31***	0.02	-0.03	—				
7. Attributions of stability	3.08	0.87	-0.04	-0.18***	-0.11**	-0.01	0.04	-0.18***	—			
8. Attributions of controllability	5.81	1.29	0.05	-0.04	-0.02	0.05	-0.06	0.02	-0.16**	—		
9. Customers' service recovery expectations	6.15	1.00	0.26***	-0.02	-0.02	-0.03	0.03	0.10**	-0.06	0.37***	—	
10. Satisfaction with the performance after recovery	4.59	2.21	-0.10**	0.00	0.02	0.51***	-0.81***	0.04	-0.13**	0.06	0.06	—

NOTE: The correlation matrix represents a pairwise correlation matrix.

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

TABLE 4
Hierarchical Regression Analysis

Variable	Customers' Expectations of Relational Continuity	Attributions of Stability	Attributions of Controllability	Customers' Service Recovery Expectations	Satisfaction With the Service Performance After Recovery	Satisfaction With the Service Performance After Recovery
<i>Control (Step 1)</i>						
Typicality of failure	-.00	.07	-.03	-.06	.24***	.24***
Importance of service performance	.11*	-.03	.19***	.35***	.02	.02
Frequency of service consumption	-.08	.06	-.09	-.03	.01	.01
Gender	.12**	-.14**	.02	.11**	-.05	-.05
Disconfirmation					.23***	.23***
R^2	.03	.03	.04	.14	.06	.06
Adjusted R^2	.02	.02	.03	.13	.04	.04
F	2.7**	2.3*	3.54***	13.95***	4.83***	4.83***
<i>Main and interaction effects (Step 2)</i>						
Number of past service encounters with the organization (one vs. many)	.26***	-.15**				-.02
Quality of past service performance (average vs. good)	.37***	-.08	-.06			-.03
Severity of failure (minor vs. severe)				.19***		.01
Customers' expectations of relationship continuity		-.33***	.12**	-.10*		.04
Attributions of stability				.00		-.12***
Attributions of controllability				.32***		-.01
Recovery expectations					-.06*	-.06*
D4: Quality of recovery performance (excellent vs. average)					-.31*	-.22
D5: Quality of recovery performance (poor vs. average)					-.72***	-.87***
Number × Quality of Past Service Performance	-.09	.14				.04
Number × Severity of Failure						-.05
Quality of Past Service Performance × Severity						-.02
Customers' Recovery Expectations × Quality of Recovery Performance (D4 × reexp)					.39**	.34**
Customers' Recovery Expectations × Quality of Recovery Performance (D5 × reexp)					.06	.06
R^2	.15	.13	.01	.14	.80	.80
Adjusted R^2	.14	.12	.01	.13	.79	.79
F ratio	18.66***	12.73***	2.13	13.57***	211.32***	90.126***

* $p < .10$, two-tailed test. ** $p < .05$, two-tailed test. *** $p < .01$, two-tailed test.

the interaction between these variables, and four control variables as predictor variables (Hypotheses 1, 2, and 3). Our data show that this regression model is significant ($F = 18.66$, $p < .001$, adjusted $R^2 = .14$). Specifically, two of the three independent variables, number of past encounters with the organization and quality of past service performance, are significantly related to customers' expectations of relationship continuity, as predicted in Hypotheses 1 and 2 ($p < .01$). The interaction between these two variables, however, is not supported, refuting Hypothesis 3. Overall, these results suggest that the two relationship history variables, number of past encounters with the organization and quality of past service performance, influence customers' expectations of relationship continuity independently rather than in conjunction.

Next, we estimated stability attributions with a regression model that included quality of past service performance, number of past encounters with the organization, the interaction between these variables, customers' expectation of relationship continuity, and four control variables as predictor variables (Hypotheses 4, 5, and 6). As shown in Table 4, the overall regression model is statistically significant ($F = 12.73$, adjusted $R^2 = .12$). Examining this model's coefficients, however, reveals that the quality of past service performance (Hypothesis 4) and its interaction with number of past encounters with the organization (Hypothesis 5) do not have the hypothesized effects on stability attributions. Instead, we find a significant *direct* effect of the number of past encounters with the organization. That is, respondents who have had more encounters

with the service organization attribute the failure to a less stable cause ($p < .05$), regardless of whether those encounters were average or excellent. Finally, customers' expectations of relationship continuity have the hypothesized negative relationship with stability attributions, supporting Hypothesis 6 ($p < .01$). Thus, it appears that both customers' expectations of relationship continuity and a longer history of past encounters with the organization cause customers to attribute service failures to less stable causes. This result provides empirical evidence of a process by which a customer relationship may buffer (i.e., minimize) the negative effects of a service failure.

The regression model that tested the hypothesized effects on controllability attributions (Hypotheses 7 and 8) included quality of past service performance, customers' expectations of relationship continuity, and four control variables as predictor variables. This model was not significant ($F = 2.13$, $p > .10$, adjusted $R^2 = .01$), and thus Hypotheses 7 and 8 are not supported. It is noteworthy that respondents perceived the failures to be highly controllable across all conditions ($x = 5.8$). It may be that respondents considered the immediate cause of the particular failures in this study (e.g., steaks are burned by grilling them too long) as inherently controllable, thus reducing any potential impact of relationship factors on those attributions. Relationship factors may play a greater role for failures whose direct cause is more ambiguous. We discuss this issue further in a later section.

The next regression model specified customers' service recovery expectations as the dependent variable and tested its relationship to the following set of predictor variables: severity of the failure, controllability attributions, stability attributions, customers' expectations of relationship continuity, and four control variables (Hypotheses 9, 10, 11, and 12). Overall, this regression model is statistically significant ($F = 13.57$, $p < .01$, adjusted $R^2 = .13$) with two of four hypotheses supported by the data. Customers' service recovery expectations increase along with the severity of the failure and controllability attributions ($p < .01$), supporting Hypotheses 9 and 10. Stability attributions did not influence customers' service recovery expectations, so Hypothesis 11 was not supported. Customers' expectations of relationship continuity were significantly related to customers' service recovery expectations ($p < .05$) but in the opposite direction than hypothesized in Hypothesis 12. Customers who expected a continuing relationship had *lower* recovery expectations after failure. Thus, it appears that customers who have strong intentions to continue their relationships expect less from the organization in terms of immediate recovery, rather than being more demanding, as we had predicted.

Finally, we tested Hypotheses 13, 14, and 15 by regressing satisfaction with the service performance after recovery on the quality of recovery performance,

customers' service recovery expectations, the interaction between these two variables, and five control variables (including disconfirmation, as discussed earlier). This regression model is statistically significant ($F = 211.32$, $p < .01$, adjusted $R^2 = .79$), with results supporting two hypotheses and partially supporting the third. As predicted in Hypothesis 14, greater customers' service recovery expectations resulted in less satisfaction with the service performance after recovery ($p < .10$). As predicted in Hypothesis 15, better quality recovery performance increases satisfaction with the service performance after recovery, and it is interesting that this effect is nonlinear. As shown in Table 4, there is a significant decrease in satisfaction with the service performance after recovery when the quality of recovery performance is average rather than excellent (see D4, $p < .10$). However, the drop in satisfaction as the quality of recovery performance changes from average to poor is much sharper (see D5, $p < .01$). Thus, it appears that falling below average quality of recovery performance has especially dire results for customer satisfaction.

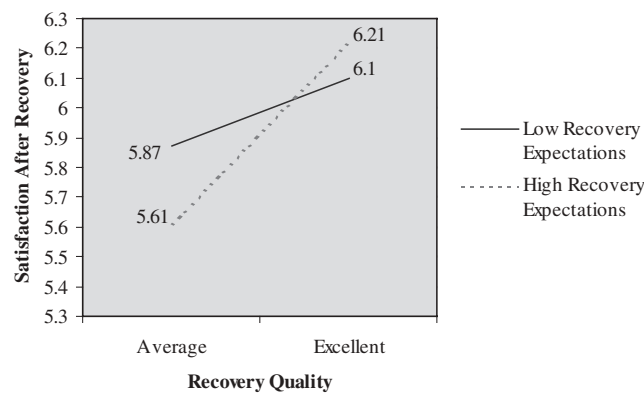
The data also support the predicted interaction between customers' service recovery expectations and quality of recovery performance, but only for the contrast between average and excellent quality recovery performance (see Customers' Service Recovery Expectations \times Quality of Recovery Performance, $p < .05$). To illustrate this interaction, we categorized customers as having either higher (above or equal to the mean of 6.15) or lower recovery expectations (below the mean) and then calculated their mean satisfaction levels when the quality of recovery performance was either average or excellent (see Figure 2). As predicted in Hypothesis 15, customers with higher recovery expectations exhibit greater drops in satisfaction with the service performance after recovery when the quality of recovery performance goes from excellent to average (mean difference = 0.60) compared with customers with lower recovery expectations (mean difference = 0.23).

The two asymmetries just discussed in the results involving quality of recovery performance are noteworthy. First, our test of Hypothesis 13 showed that the drop in satisfaction with the service performance after recovery for average to poor quality of recovery performance was much greater than the drop from excellent to average quality of recovery performance. However, our test of Hypothesis 15 then shows that the difference between the average and excellent quality of recovery performance does matter more for one group—the customers with the higher recovery expectations. Thus, our empirical findings for Hypotheses 13 and 15 support reference dependence (with the referent being the customers' recovery expectations) and the greater impact of outcomes that fall below expectations described in prospect theory (Kahneman and Tversky

FIGURE 2
Interactive Effects of Recovery Expectations and Recoveries on Satisfaction

Customer's Service Recovery Expectations	Average Quality Recovery Performance	Excellent Quality Recovery Performance
Low (mean for low = 5.21)	5.87	6.10
High (mean for high = 6.83)	5.61	6.21

Dependent Variable: Satisfaction with the performance after recovery



1979; Mittal et al. 1998). For customers in general, it appears that obtaining an average recovery is critical for increasing satisfaction with the service performance. For more demanding customers, satisfaction with the service performance can be enhanced further by making the extra effort to produce an excellent quality recovery performance, which, in fact, may be closer to their higher recovery expectations.

We also note that the main effect of expectations in our study was small relative to the main effect of quality of recovery performance and its interaction with customers' service recovery expectations. This is consistent with the principle that satisfaction depends more on performance and disconfirmation when performance is easy to evaluate (a situation that applies to the current study) and more on expectations alone when performance is ambiguous (Oliver 1997).

Finally, we estimated the direct effects of attributions of stability and controllability on satisfaction with the service performance after recovery and found that stability attributions has a significant effect on this dependent variable ($-0.24, p < .01$). This unhypothesized direct effect of attributions of stability on satisfaction with the service performance after recovery is important, and we discuss the implication of this relationship in the Discussion and Conclusions section.

Results of Individual Difference Variables (Control Variables)

Several control variables had unhypothesized, significant relationships with constructs in the model. Consistent with expectancy-disconfirmation theory, we found that recovery disconfirmation was significantly related to satisfaction with the service performance after recovery ($p < .01$). In addition, customers who perceived the scenario failure to be typical expressed greater satisfaction with the service performance after recovery than customers who perceived the failure to be atypical ($p < .01$). Thus, it appears that customers who regard a failure as an industry norm are less dissatisfied with the service performance after recovery.

Both gender and the importance of the service affected expectations and attributions. Compared with men, women had higher expectations of relationship continuity ($p < .05$), perceived the service failure to be less stable ($p < .05$), and had higher service recovery expectations ($p < .05$). Customers who considered the service more important also had higher expectations of relationship continuity ($p < .10$), perhaps because of the risks of switching. When the service is more important, customers hold the organization to higher standards, as shown by attributions of greater controllability ($p < .01$) and higher recovery

expectations ($p < .01$). We discuss possible implications of these results in a later section.

DISCUSSION AND CONCLUSIONS

The Impact of Customer-Organization Relationships

This research focuses on how customer-organization relationships affect customers' responses to organizational failures and recovery efforts. As discussed earlier, previous research on this issue has produced inconsistent findings and little empirical evidence as to the processes underlying these effects. We now consider the implications of the current model and results. We begin with our central research question: *Do ongoing relationships buffer or magnify the effect of service failures on customer satisfaction?* Our conceptual model proposed processes involving attributions and expectations that could potentially account for these opposing effects.

The results clearly show that customer-organization relationships can help to shield a service organization from the negative effects of failures on customer satisfaction. The first buffering effect was, as predicted, a direct effect from customers' expectations of relationship continuity to customers' service recovery expectations. Customers who expect the relationship to continue have lower service recovery expectations; these lower service recovery expectations in turn result in greater satisfaction with the service performance after recovery. This finding is consistent with Berry (1995), who suggested that customers involved in affective and social service relationships might exhibit greater tolerance when failures occur. Our results document the presence of this expectations-based buffering effect and also demonstrate its potential for protecting organizations even when the relationships lack strong affective elements.

This specific finding was contrary, however, to our prediction that customers in a relationship would be *more* demanding with respect to the recovery. The logic of the hypothesis was that customers with stronger expectations of relationship continuity believe that their ongoing patronage should be balanced by greater efforts from the seller when a failure occurs. Our opposite finding of *greater* tolerance on the part of these customers may be explained by a longer time horizon for customers who expect the relationship to continue. Customers with high expectations for relationship continuity may demand less immediate compensation for a failure because they consider the balance of equity across a longer horizon of exchanges. This explanation is consistent with research in a manufacturer-supplier context, which shows that channel partners with high expectations of future interactions tend to believe that inequities caused by a partner's

unsatisfactory performance will equalize during future transactions (Anderson and Weitz 1989; Ganesan 1994). If time horizon does play this role in explaining relationship effects, then the buffering effect that this research has demonstrated through customers' service recovery expectations may be bounded by the severity of the failure. That is, very severe failures that threaten the existence of the relationship might lead to a shortened time horizon and potentially a different effect on customers' service recovery expectations.

The second buffering effect shown in our study involved attributions of causality. Specifically, higher customers' expectations of relationship continuity led to more favorable attributions about stability (that the failure's cause is less stable), which led in turn to higher satisfaction with the service performance after recovery. This finding contributes to existing research by providing evidence of a process that may underlie the positive relationship effects found by some researchers (Anderson and Sullivan 1993; Berry 1995; Boulding et al. 1993; Tax et al. 1998).

It is also noteworthy that the regression model for attributions of controllability was not significant. One possible explanation for this is that respondents may have judged the failures used in our study to be highly controllable in general. Further research is needed to establish whether relationships can affect controllability attributions in different failure scenarios. It may be that relationships will have a greater influence on attributions of controllability when the causes of failures are more ambiguous. For example, if customers can envision both controllable and uncontrollable causes for a failure (e.g., a long wait for restaurant service), then their final attributions may be more susceptible to influence by their relationship with the organization. Identifying and testing those service situations is an important issue for further research because, in this study, attributions of controllability did have a strong positive effect on customers' service recovery expectations and, in turn, satisfaction with the service performance after recovery.

Future research should also identify factors that influence the impact of these attribution processes. For example, in some situations, no recovery can adequately compensate the customer for losses incurred from a service failure (e.g., unsuccessful surgery, a ruined wedding reception). In those cases, the reduced possibility of compensatory future gains may lead consumers in an ongoing relationship to expect more from the current recovery. As a result, that relationship may not reduce customers' service recovery expectations to the extent it did in the restaurant context. This example of a shortened time horizon might also alter the importance of attributions of stability and controllability. For example, the stability of the failure's cause may be moot to a customer who experiences a ruined wedding reception, and his or her dissatisfaction may depend more on whether he or she considers it to have been

under the organization's control. Future research should focus on these interesting and complex questions about how and when specific attributions affect customer satisfaction.

Another important boundary to consider is the type of relationship that is relevant to the service situation. In this study, we examined relationships based on customers' expectations of continued patronage of the service provider. As discussed earlier, relationships based instead on strong social attachment or involvement have been found to magnify the negative consequences of failure (Goodman et al. 1995; Kelley and Davis 1994). Such relationships may encompass sunk costs, investments, trust, and commitment based on internalization or identification. Any of these factors may alter the attributions made by customers after failures and recoveries, and it is important that research test the current results across relationship types.

Finally, future research should determine how customers respond to reoccurring failures and the extent to which this alters the nature of the relationship between the customer and the organization. Zeithaml et al. (1993) proposed that initial problems can lead to heightened expectations in future service encounters and lower tolerance for subsequent failures. Customers who experience repeated failures may decrease their recovery expectations for the current outcome because they lose confidence that equity will be restored in the long term. The effects of customer-organization relationships may also be attenuated when customers possess specific knowledge about the cause of a failure. For example, when service slows after 40 students on a field trip enter a restaurant, consumers may base their attributions about the failure on this information and be unaffected by any relationship factors.

Organizational Recovery After Service Failure

Our findings show that customers' service recovery expectations rise with the severity of the failure, as suggested by Zeithaml et al. (1993), and that excellent-quality recoveries are capable of reducing the dysfunctional consequences of failure. However, our results show that it is critical for managers to know what constitutes "adequate (recovery) expectations" for their customers. An organization that compounds an error with an insufficient recovery incurs a large penalty, as shown by the negative consequences of the poor-quality service recovery in our study. This is consistent with the "double-deviation" effect discussed by Bitner et al. (1990).

Organizations managing recovery strategies are also well-advised to consider segment differences in recovery expectations. Customers with high recovery expectations are sensitive to changes across the whole range of quality of recovery performance, but providing an above-average

quality of recovery performance for segments with lower service recovery expectations may not result in much added satisfaction. These results make sense from a prospect theory perspective if customers' service recovery expectations act as a reference point, with greater sensitivity to differences in quality of service recovery below that reference point than above it (Kahneman and Tversky 1979). Thus, one priority for managers is to understand the nature of this reference point for different customer segments and different contexts, in order to avoid both insufficient recoveries that create dissatisfaction and overly generous recoveries that fail to yield meaningful increases in customer satisfaction. Our results, which show higher customers' service recovery expectations for women and for those who place higher importance on the service, may help managers who wish to identify segments that differ in recovery expectations.

Finally, this study examined customer attributions immediately after failure, but customers may revise these attributions after the service organization offers a recovery. Previous research offers some evidence that providing information or explanations to customers during recovery influences their attributions and may be a vital aspect of an effective recovery (Bitner 1990; Tax et al. 1998). For example, Tax et al. (1998) found that customers value information about the cause of a failure when they perceive it as part of the problem resolution, and not an attempt to shirk responsibility. This attribution-updating process is hard to isolate if customers must retrospectively untangle initial attributions from those reshaped by a recovery, but a scenario approach such as the one used here may make such research feasible. The use of recovery strategies to shape attributions after failure is clearly an important issue to marketers, especially if attribution processes shape customer satisfaction after failures, as our study shows. Understanding updated attributions, as well as initial attributions, should be a priority for future research.

Study Limitations

The current study has several limitations. The role-playing method, although essential to experimental manipulation, elicits far less involvement from participants than a real service encounter. Thus, participants' responses to our scenarios may be substantially weaker than their reactions to failures and recoveries they actually experience. In addition, the use of a homogeneous student sample, while desirable for reducing extraneous variance, also limits the findings' generalizability. One priority for future research should be to test the model using a broad range of customers reporting actual service experiences. This approach poses a new array of problems, such as retrospectively distinguishing between failure and recovery

effects, but it would provide an essential complement to the current work.

A final study limitation is the use of only one service context, which was intended to maintain the similarity of failures and recoveries across conditions. Customers are likely to have industry-specific knowledge that will influence their expectations about the frequency, type, and magnitude of service failures and recoveries. Future research should identify which aspects of this knowledge alter customer attributions and expectations and thus moderate the current findings.

APPENDIX A Manipulations and Scenarios

Experimental Manipulations

Severity of the Failure

Minor—“As you cut into your steak, you notice that it is slightly undercooked.”

Severe—“As you cut into your steak, however, you notice that it is gristly and overcooked. In fact, the steak is so tough that it is almost inedible.”

Number of Past Encounters With the Organization

One past encounter—“You have eaten at this restaurant only once before.”

Many past encounters—“You have eaten at this restaurant at least twice a month for the last year, so you consider yourself to be a regular customer.”

Quality of Past Service Performance

Average—“In your experience, the food and the service provided by this restaurant are comparable to restaurants in the same price range in Blacksburg. Overall, you think the restaurant’s performance is about average.”

Above average—“In your experience, the food and the service provided by this restaurant are better than comparable restaurants in the same price range in Blacksburg. Overall, you think the restaurant’s performance is definitely much better than average.”

Quality of Recovery Performance

Excellent service recovery—“In response to your complaint, the waitress apologizes for the problem and tells you that she will bring you a steak cooked the way you want it. When she brings you back another steak, she apologizes again and tells you that you won’t be charged for the dinner. You try the new steak, and it is just what you wanted.”

Average service recovery—“In response to your complaint, the waitress apologizes for the problem and tells you that she will bring you a steak cooked the way you want it. When she returns with the steak, you try it, and it is just what you wanted.”

Poor service recovery—“In response to your complaint, the waitress apologizes for the problem, but nothing is done to solve it.”

Scenario Examples

Many Past Encounters • Above-Average Quality of Past Service Performance • Severe Failure • Excellent-Quality Recovery Performance

In the following scenario, we are interested in your reactions to a dining experience at a restaurant. We will describe this experience and ask you questions about different aspects of it.

You and a group of friends decide to go out for dinner at a moderately priced restaurant where the average steak entree is \$10. This is about average for Blacksburg, where you typically pay \$8 to \$12 for a steak.

You have been eating at this restaurant at least twice a month for the last year, so you consider yourself to be a “regular customer.” In your experience, the food and the service provided by this restaurant are better than comparable restaurants in the same price range in Blacksburg. Overall, you think the restaurant’s performance is definitely much better than average.

Soon after entering the restaurant, a hostess seats you and the group. A waitress introduces herself and takes your food and drink orders. You decide to have a steak served with a baked potato, salad, and dinner roll. You tell the server that you want the steak to be cooked “medium.”

After a short period, your meal is served. As you cut into your steak, however, you notice that it is gristly and also overcooked. In fact, the steak is so tough that it is almost inedible.

Your waitress asks how your food is, and you tell her that your steak is gristly and very overcooked. In response to your complaint, the waitress apologizes for the problem and tells you that she will bring you a steak cooked the way you want it. When she brings back another steak, she apologizes again and tells you that you won’t be charged for the dinner. You try the new steak, and it is just what you wanted.

One Past Encounter • Average Quality of Past Service Performance • Severe Failure • Poor-Quality Recovery Performance

In the following scenario, we are interested in your reactions to a dining experience at a restaurant. We will describe this experience and ask you questions about different aspects of it.

You and a group of friends decide to go out for dinner at a moderately priced restaurant where the average steak entree is \$10. This is about average for Blacksburg, where you typically pay \$8 to \$12 for a steak.

You have eaten at this restaurant only once before. In your experience, the food and the service provided by this restaurant are comparable to restaurants in the same price range in Blacksburg. Overall, you think the restaurant’s performance is about average.

Soon after entering the restaurant, a hostess seats you and the group. A waitress introduces herself and takes your food and drink orders. You decide to have a steak served with a baked potato, salad, and dinner roll. You tell the server that you want the steak to be cooked “medium.”

After a short period, your meal is served. As you cut into your steak, however, you notice that it is slightly undercooked. Your waitress asks how your food is, and you tell her that your steak is slightly undercooked. In response to your complaint, the waitress apologizes for the problem, but nothing is done to solve it.

APPENDIX B

Measures

Model Constructs

Customer's Expectations of Relationship Continuity (adapted from Lusch and Brown 1996); coefficient alpha = .78

At this point in your meal, how are you feeling about the restaurant? (1 = *strongly disagree*, 7 = *strongly agree*)

ERC1. I expect to be coming to this restaurant for a long time.

ERC2. I do not expect to visit this restaurant in the future. (R)

ERC3. I expect my relationship with this restaurant to be enduring.

ERC4. It is likely that I will visit this restaurant in the future.

Attributions of Stability (adapted from Russell 1982); coefficient alpha = .62

The cause of the (failure description) is likely to be:

STAB1. Temporary—Permanent.

STAB2. Stable over time—Varies over time. (R)

STAB3. Occurring frequently—Occurring infrequently. (R)

STAB4. Changing over time—Unchanging over time.

Attributions of Controllability (adapted from Russell 1982); coefficient alpha = .77

The cause of the (failure description) is likely to be:

CTRL1. Highly controllable by the restaurant—Not at all controllable by the restaurant. (R)

CTRL2. Preventable by the restaurant—Not at all preventable by the restaurant (R)

Customers' Service Recovery Expectations (new scale); coefficient alpha = .65

Given the problem that you encountered with the steak, how do you expect the restaurant to respond? (1 = *strongly disagree*, 7 = *strongly agree*)

REC1. I expect the restaurant to do everything in its power to solve the problem.

REC2. I don't expect the restaurant to exert much effort to solve the problem. (R)

REC3. I expect the restaurant to try to make up for the steak being (slightly undercooked/gristly and very overcooked).

Satisfaction With the Service Performance After Recovery (adapted from Oliver and Swan 1989); coefficient alpha = .92

At this point in your meal, how are you feeling about the steak dinner? (1 = *strongly disagree*, 7 = *strongly agree*)

SAT1. I am pleased with the steak dinner.

SAT2. I am unhappy with the steak dinner. (R)

SAT3. I am satisfied with the steak dinner.

Typicality of Core Service Failure (new scale); coefficient alpha = .76

Based on your experience with ordering steaks, how typical is it to get one that is (slightly undercooked/gristly and very overcooked), as described in the scenario? (*extremely atypical—extremely typical*)

Based on your experience with ordering steaks, how characteristic is the problem described in the scenario? (*extremely uncharacteristic—extremely characteristic*)

Based on your experience, how frequently do problems such as that described in the scenario take place? (*frequently—infrequently*) (R)

Disconfirmation (Oliver and DeSarbo 1988); coefficient alpha = .92

What is your opinion of the restaurant's response to your complaint about the steak?

Better than I anticipated—Worse than I anticipated (R)

Worse than I expected—Better than I expected

Manipulation Checks

Quality of Past Service Performance (new scale); coefficient alpha = .88

Based on the experiences we have described, please give your evaluations of the restaurant's performance (1 = *strongly disagree*, 7 = *strongly agree*)

The food and quality at this restaurant have been exceptional.

The quality of this restaurant's food and service has been poor. (R)

The quantity of the food and service provided by this restaurant in the past has been excellent.

Number of Past Encounters With the Organization (new scale); coefficient alpha = .95

How would you characterize your history with this restaurant? (1 = *strongly disagree*, 7 = *strongly agree*)

I have visited this restaurant many times in the past.

I am a frequent visitor of this restaurant.

I normally go to this restaurant.

Severity of the Failure (new scale); coefficient alpha = .96

Based on your experience with restaurants, how would you describe being served a steak that is slightly undercooked/gristly and overcooked?

Mild service problem—Severe service problem

Major service problem—Minor service problem (R)

Insignificant service problem—Significant service problem

Quality of Recovery Performance; coefficient alpha = .97

What is your opinion of the restaurant's response to your complaint about the steak?

Extremely bad—Extremely good

Poor—Excellent

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NOTES

1. The most frequent response of the participants (60.6%) was to provide a properly cooked meal (with a minority of this group also specifying an apology). The remaining 39.4 percent of the sample expected a discount or free item or meal in addition to the food being properly cooked.

2. The dummy codes used are as follows: Severity of Failure (0 = mild, 1 = severe); Number of Past Service Encounters (0 = short, 1 = long); Quality of Past Performance (0 = average, 1 = good); Recovery Performance (0 = excellent vs. average, 1 = poor vs. average).

3. $Q = (1 - R^2_m) / (1 - M)$, with R^2_m equal to .987 and M equal to .984. R^2_m represents the overall R^2 for the fully recursive model, while M indicates the R^2 of an overidentified model.

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